80-378

No.

Supreme Court, U. S.
FILED
SEP 8 1980
MICHAEL RODAK, JR.

IN THE
Supreme Court of the United States
OCTOBER TERM, 1980

CHRYSLER CORPORATION,
Petitioner,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
and DOUGLAS M. COSTLE, Administrator,
Respondents.

APPENDIX TO PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA CIRCUIT

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September 8, 1980

WILSON - EPES PRINTING CO., INC. - 789-0096 - WASHINGTON, D.C. 20001

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APPENDIX A

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

No. 78-2273

CHRYSLER CORPORATION, PETITIONER

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY AND DOUGLAS M. COSTLE, ADMINISTRATOR, RESPONDENTS

Appeal from an Order of the Administrator of the United States Environmental Protection Agency

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Argued January 29, 1980

Decided June 19, 1980

James A. Hourihan, with whom *Gail Starling Marshall* was on the brief, for petitioner.

Charlotte Uram, Attorney, Department of Justice, with whom *James W. Moorman*, Assistant Attorney General, *Angus MacBeth*, Attorney, Department of Justice, *Joan*

Z. Bernstein, General Counsel, Environmental Protection Agency, and *Gerald K. Gleason*, Attorney, Environmental Protection Agency, were on the brief, for respondents. *Kevin L. Bromberg*, Attorney, Environmental Protection Agency, also entered an appearance for respondents.

Before WRIGHT, *Chief Judge*, and MCGOWAN and MIKVA, *Circuit Judges*.

Opinion for the court filed by *Chief Judge* WRIGHT.

WRIGHT, *Chief Judge*: Chrysler Corporation has petitioned for review of a final order of the Administrator of the Environmental Protection Agency (EPA), issued on November 20, 1978, directing Chrysler to recall all 1975 vehicles equipped with 360 and 400 cubic inch displacement (CID) engines having two-barrel carburetors and catalytic converters.[1] The Administrator determined that a substantial number of the vehicles in the recall class fail to conform to the applicable carbon monoxide emission standards when in actual use, even though they have been "properly maintained and used." Having found this violation of Section 207(c)(1) of the Clean Air Act, 42 U.S.C. § 7541(c)(1) (Supp. II 1978),[2] the Administrator ordered Chrysler to submit a plan for remedying the nonconformity. Jurisdiction of this court is pursuant to Section 307(b) of the Act, 42 U.S.C. § 7607(b) (Supp. II 1978).

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[1] We will denote these vehicles as the "recall class." We assume that the Administrator's order does not include 1975 vehicles sold in California, equipped with air pumps.

[2] The Clean Air Act as we know it, 42 U.S.C. §§ 7401 *et seq.* (Supp. II 1978), is a composite of many acts passed by Congress. *See* Clean Air Act of 1963, Pub. L. No. 88-206, 77 STAT. 392; Motor Vehicle Air Pollution Control Act, Pub. L. No. 89-272, 79 STAT. 992; Clean Air Act Amendments of 1966, Pub. L. No. 89-675, 80 STAT. 954; Air Quality Act of 1967, Pub. L. No. 90-148, 81 STAT. 485; Clean Air Amendments of 1970, Pub. L. No. 91-604, 84 STAT. 1676; Comprehensive

Chrysler has sold approximately 208,000 vehicles in the recall class, all equipped with catalytic converters designed to reduce carbon monoxide emissions to within federal standards. Not long after these vehicles had been sold, however, EPA discovered that many of them were failing to meet the standards. After extensive tests EPA determined that excessive emissions were primarily caused by misadjustment of the carburetor idle mixture of the vehicles. The Agency gathered evidence that the misadjustments were the inevitable result of certain defects in the design of the emission control system of the recall class, and later initiated an administrative proceeding to require Chrysler to recall the vehicles and correct this design. An initial hearing before an Administrative Law Judge (ALJ) resulted in a recall order against Chrysler, which the company appealed to the Administrator. The Administrator determined, first, that as a matter of law a manufacturer must be held responsible in a recall action for nonconformities primarily caused by design defects, provided the manufacturer foresaw or should have foreseen the consequences of the defects but failed to take available steps to obviate them, and, second, on the evidence, that Chrysler's recall class must be recalled under this standard. Chrysler disputes both of these positions. On the legal issue Chrysler argues that since the nonconforming vehicles in the recall class were misadjusted, they were not "properly maintained" within the meaning of the Act and thus should not be recalled. On the factual issue Chrysler asserts that the Administrator's conclusions were not supported by sub-

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Health Manpower Training Act of 1971, Pub. L. No. 92-157, 85 STAT. 431, 464; Energy Supply and Environmental Coordination Act of 1974, Pub. L. No. 93-319, 88 STAT. 246; Clean Air Act Amendments of 1977, Pub. L. No. 95-95, 91 STAT. 685; Safe Drinking Water Amendments of 1977, Pub. L. No. 95-190, 91 STAT. 1393, 1399. The Act was formerly codified at 42 U.S.C. §§ 1857 *et seq.* (1976).

stantial evidence in the record. Because we agree with the Administrator's interpretation of Section 207(c)(1) and determine that there was substantial evidence to support his findings of a violation, we affirm.

I. Statutory Framework

In 1970 Congress passed the Clean Air Amendments of 1970, Pub. L. No. 91-604, 84 Stat. 1676, which required auto manufacturers to reduce carbon monoxide emissions by 1975 to one-tenth of former levels: to 3.4 grams per mile. *See* 36 Fed. Reg. 12657 (1971). The Administrator may, however, postpone implementation of this statutory standard on grounds of technological feasibility or other factors. *See* Section 202(b)(5) of the Act, 42 U.S.C. § 7521(b)(5) (Supp. II 1978). In 1973 the Administrator postponed implementation of the 3.4 grams per mile standard and set an interim carbon monoxide emission standard of 15 grams per mile.[3] This 15 grams per mile standard was in effect during the 1975 model year, with which we are concerned.

To comply with the Act manufacturers must design, build, and equip each new vehicle to conform to emission

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[3] 38 Fed. Reg. 10317 (1973). This postponement was in response to this court's decision in *Internat'l Harvester Co. v. Ruckelshaus*, 478 F.2d 615 (D.C. Cir. 1973). It was the first of many postponements. In 1974 Congress postponed the effective date to 1977. Energy Supply and Environmental Coordination Act of 1974, Pub. L. No. 93-319, § 5, 88 Stat. 246, 258. In 1975 the Administrator suspended the rules for one year, until 1978. 40 Fed. Reg. 11900 (1975). In 1977 Congress again postponed the effective date, to 1981. 1977 Amendments to the Clean Air Act, Pub. L. No. 95-95, 91 Stat. 685, 751, *see* 42 U.S.C. § 7521(b)(1)(A). Most recently, the Administrator granted a further reprieve from the 3.4 grams per mile standard to Chrysler's 1981 line of front-wheel-drive cars, code-named "K-cars." *Washington Post*, March 19, 1980, at E1, col. 1; *see* 45 Fed. Reg. 17914 (1980) (containing a list of models exempt from the 3.4 grams per mile standard).

standards at the time of sale and to be free from defects in material or workmanship that would cause the vehicle to fall below the standards within a five-year or 50,000-mile period after sale. Section 202(a)(1), (d)(1), 42 U.S.C. § 7541(a)(1), (d)(1) (Supp. II 1978). Manufacturers must provide a warranty to purchasers to this effect. *Id.* § 207(a)(1), 42 U.S.C. § 7541(a)(1). If the purchaser of a vehicle maintains and operates it in accordance with the written instructions of the manufacturer, *see id.* § 207(c)(3), 42 U.S.C. § 7541(c)(3), and it fails to conform to emission standards during the warranty period (thus subjecting the owner to penalty or other sanction) the manufacturer must remedy the nonconformity at its own expense. *Id.* § 207(b), 42 U.S.C. § 7541(b).

To ensure compliance with the Act EPA conducts a three-stage testing process. Under authority of Section 206(a), 42 U.S.C. § 7525(a), the Agency examines prototypes of new vehicles or new vehicle engines to determine whether they will conform to the emission standards and issues a "certificate of conformity" to vehicles passing this test. As a part of this examination the Agency inspects the written maintenance and use instructions provided to the purchasers. Until the 1977 amendments went into effect the Agency determined whether such instructions were "reasonable and necessary to assure the proper functioning" of the emission control system. Section 207(c)(3), 42 U.S.C. § 1857f-5a(c)(3) (1976).[4]

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[4] Prior to the 1977 amendments § 207(c)(3), 42 U.S.C. § 1857f-5a(c)(3) (1976), provided, in relevant part:

> The manufacturer shall furnish with each new motor vehicle or motor vehicle engine such written instructions for the maintenance and use of the vehicle or engine by the ultimate purchaser as may be reasonable and neces-

The second stage of the testing process takes place after vehicles come off the assembly line. At this time the Agency examines sample vehicles to ensure that they conform to the requirements of the Act. Authority to conduct this examination derives from Section 206(b), 42 U.S.C. § 7525(b) (Supp. II 1978). If the Administrator determines that some or all of the vehicles off the assembly line fail to conform to the applicable regulations, he must suspend the certificates of conformity for those vehicles until the manufacturer corrects the deficiency.

The third stage of the testing process takes place while the vehicles are in actual use. EPA and related state agencies test sample vehicles to determine whether they continue to satisfy emission standards during the statutory period. If a "substantial number" of the vehicles in any class or category fail to conform to the emission standards "although properly maintained and used" by the owner, then the Administrator must notify the manufacturer and require it to submit a "plan for remedying the nonconformity" at the manufacturer's expense. Unlike the discovery and cure of nonconformity of individual vehicles under the warranty provisions, the remedy at this stage is recall of the *entire class* of vehicles in order to correct the design, material, or workmanship defect causing the nonconformity. This provision—Section 207(c)(1) of the Act, 42 U.S.C. § 7541(c)(1)

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sary to assure the proper functioning of emission control devices and systems. * * *

Section 207(c)(3)(A), 42 U.S.C. § 7541(c)(3)(A) (Supp. II 1978), now provides, in relevant part:

> The manufacturer shall furnish with each new motor vehicle or motor vehicle engine written instructions for the proper maintenance and use of the vehicle or engine by the ultimate purchaser and such instructions shall correspond to regulations which the Administrator shall promulgate. * * *

(Supp. II 1978)[5]—is the statutory basis for the order under review.

II. The Recall Class

A. *Design of the Emission Control System*

To reduce carbon monoxide emissions and bring its vehicles into conformity with the interim federal standards Chrysler, like the other American auto manufacturers, installed catalytic converters in its 1975 model year vehicles. A catalytic converter can reduce carbon monoxide emissions by 60-80 percent by promoting a chemical reaction among the carbon monoxide, hydrocarbons, and oxygen. This reaction produces two harmless byproducts, carbon dioxide and water.[6]

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[5] Section 207(c)(1), 42 U.S.C. § 7541(c)(1) (Supp. II 1978), provides, in relevant part:

> If the Administrator determines that a substantial number of any class or category of vehicles or engines, although properly maintained and used, do not conform to the regulations prescribed under section 7521 of this title, when in actual use throughout their useful life (as determined under section 7521(d) of this title), he shall immediately notify the manufacturer thereof of such nonconformity, and he shall require the manufacturer to submit a plan for remedying the nonconformity of the vehicles or engines with respect to which such notification is given. The plan shall provide that the nonconformity of any such vehicles or engines which are properly used and maintained will be remedied at the expense of the manufacturer. * * *

[6] Joint Appendix (JA) I:357 (Gockel testimony); JA III:-1217 (Decision and Order). This opinion will refer to the testimony of the following EPA witnesses: Mr. Roy Reichlen, an EPA environmental engineer; Mr. Charles Dietrick, an EPA aerospace and mechanical engineer involved in investigating emission nonconformities; Mr. John White, project manager for large-scale emission testing programs; Mr. Barry D. Nussbaum, an EPA data analyst; Professor Nozer

An adequate supply of oxygen in the exhaust stream is essential to effective operation of the catalytic converter. Unless there is enough oxygen to oxidize all the emissions, the catalytic converter will begin to work poorly and at some point cease to operate altogether.[7] There are two major methods of supplying enough oxygen: installation of an air pump to introduce additional oxygen into the system, and precise adjustment of the carburetor idle to ensure that sufficient oxygen is mixed with the fuel. The principal disadvantage of air pumps is that they increase the cost of the system by about $50 per car[8]; they also decrease gasoline mileage[9] and may

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Singpurwalla, an expert witness on statistics; Mr. Jack L. Gockel, a pollution control consultant; Mr. John P. DeKany, director of EPA's Emission Control Technology Division; and Mr. Peter E. Kohnken, team leader of EPA's inspection unit that certified the recall class. The opinion will also refer to the testimony of the following Chrysler witnesses: Mr. Carlos M. Heinen, Chrysler's director of Emissions/Fuel Economy Certification and Materials Engineering; Mr. G. W. Robertson, chief engineer of Emissions/Fuel Economy at Chrysler; Mr. Forrest Cook, a mechanical engineer employed by Carter Carburetor Company; Mr. Harry Sherwin, a carburetor design engineer for Holley Carburetor Division of Colt Industry Operating Corporation; Mr. Miles Brubacher, an independent consulting engineer; Mr. James Freers, a mechanical engineer employed by Chrysler; Mr. Robert Harris, product development supervisor in the Fuel Metering Systems Laboratory of Chrysler; and Mr. Goodwillie, a Chrysler engineer working with carburetors and emission controls.

[7] JA I:356-357 (Gockel testimony); JA III:1217 (Decision and Order).

[8] JA I:378 (Gockel testimony); JA III:1224 (Decision and Order).

[9] JA III:1224 (Decision and Order). The Administrator stated that air pumps cause "a slight reduction in fuel economy," but that the precise amount of the reduction was not established in the record. JA III:1224. A Chrysler engineer

in some cases inhibit proper oxidation of the emissions.[10] On the other hand, Chrysler engineers recognized that air pumps generally decrease emissions more effectively than does the carburetor idle adjustment system. It was for just that reason that Chrysler used air pumps in its 1975 model year vehicles subject to the more stringent emission standards of California.[11] Nevertheless, Chrysler did not use air pumps in the recall class vehicles it sold in other states, because Chrysler engineers thought them unnecessary to achieving compliance with federal standards.[12] Instead, Chrysler decided to rely on the carburetor adjustment method to ensure an adequate supply of oxygen to the catalytic converter.

The company instructed owners to take their vehicles to a mechanic for servicing at intervals of 15,000 miles or whenever they detected a malfunction.[13] If all went well, the mechanic would adjust the carburetor precisely in accord with Chrysler's instructions, as detailed in the service manual[14] and summarized on a permanent label affixed to the underside of the engine hood.[15] By means of this adjustment enough oxygen would be mixed with the fuel in the idle circuit to enable the catalytic converter to oxidize most of the carbon monoxide in the exhaust. A correct adjustment of the fuel-air mixture

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stated that tests of California vehicles equipped with air pumps revealed a reduction in fuel economy of approximately 5%. JA II:732-733 (Goodwillie testimony).

[10] JA II:664 (Heinen testimony).

[11] JA I:15 (Heinen testimony).

[12] JA I:15-16 (Heinen testimony); JA II:732-733 (Goodwillie testimony).

[13] JA V:1695-1696 (Chrysler Owner's Manual).

[14] JA V:1876-1879 (Chrysler Service Manual).

[15] JA IV:1505 (Chrysler underhood label).

in the idle circuit is called a "lean" setting, meaning a low proportion of fuel to air.[16] This setting is measured by the percentage concentration of carbon monoxide in the exhaust as detected upstream of the catalyst. Chrysler calculated that a 0.5 percent carbon monoxide setting would generally enable the catalytic converter to reduce carbon monoxide emissions to about 12 grams per mile—well within the interim standard. In order to provide a greater margin of safety, Chrysler decided to specify a 0.3 percent carbon monoxide setting.[17] When the carburetor idle is set to Chrysler's specifications, most of the vehicles pass the carbon monoxide emission standards; when the idle mixture is adjusted to "richer" levels, most of the vehicles fail the standards.[18]

Unfortunately, the idle adjustment method has apparently not worked as well in practice as in theory. EPA researchers have linked the poor emission control performance of the recall class in actual use to certain characteristics of the carburetor idle adjustment process that make precise adjustment difficult and undesirable to owners and mechanics. To explain what EPA finds to be wrong with the design of this process, we must describe in some detail the way the idle mixture is adjusted and the relation of such adjustment to driveabiilty of the vehicles.

The adjustment process is cumbersome and time-consuming, taking the mechanic approximately 30 to 40

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[16] JA I:357-358 (Gockel testimony).

[17] JA II:721-722, 733 (Goodwillie testimony). *See also* JA I:13 (Heinen testimony).

[18] JA I:354-355 (Gockel testimony). Thus the primary cause of nonconformity among the recall class was misadjustment of the idle, as EPA found. JA III:1179 (Initial Decision, Findings of Fact Nos. 39-41); JA III:1217-1218 (Decision and Order). *See also* JA I:354 (Gockel testimony).

minutes, according to an EPA investigation.[19] The mechanic must first obtain a Chrysler Huntsville exhaust emission analyzer or other approved infrared analyzer, and must verify that it is warmed up and calibrated according to the manufacturer's instructions. He must check to see that the sample lines and connections of the sampling system for the analyzer are free of leaks, and must also warm up the vehicle's engine and allow it to idle for no more than ten minutes. Then the mechanic must remove the plug from the threaded catalyst tap on the vehicle and install the sample line of the analyzer in the tap upstream of the catalyst. This will generally require the mechanic to crawl under the car or to use a hoist. He must then start up the vehicle's engine and verify that the idle RPM and timing are within specification. At this point he must measure the idle carbon monoxide concentration. If it exceeds specified limits he must adjust the mixture screws on the carburetor to achieve a "leaner" mixture of fuel and air in the idle circuit, checking back and forth between the analyzer and the carburetor to monitor the effect of his adjustment on the idle mixture. A clockwise turn of a screw will decrease the amount of fuel discharged through the idle port and into the idle circuit; a counterclockwise turn will increase the amount of fuel, resulting in a "richer" mixture. The adjustment screws are highly sensitive and must be turned in small fractions of a rotation in order to set the adjustment with sufficient precision. After making the proper adjustment the mechanic must also balance the mixture screws on a two-barrel carburetor for lowest level of hydrocarbons or

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[19] JA I:402 (Gockel statement). A survey of 27 mechanics at 25 dealerships found only one mechanic who could perform the operation in less than 15 minutes. Eight took 15-20 minutes; 15 took 20-40 minutes; two took more than 40 minutes. JA V:1979. Chrysler, however, introduced evidence that the procedure takes about 14 minutes. Brief of petitioner at 80.

smoothest idle within the prescribed specifications.[20] An EPA expert who interviewed 27 Chrysler dealership mechanics and also performed the maintenance procedures concluded that "the procedure is cumbersome, time consuming and most importantly will usually result in customer dissatisfaction." Joint Appendix (JA) I:368 (Gockel testimony).[21]

The complex and time-consuming nature of the adjustment procedure is significant because the manufacturer did not allow enough time in its reimbursement schedules for dealership mechanics to make carburetor adjustments, according to a survey of Chrysler mechanics.[22] This meant that many mechanics had to complete the specified adjustments without full compensation for their time.[23] Moreover, Chrysler did not reimburse mechanics for a second adjustment in the event a customer was dissatisfied with the results of the first,[24] as frequently happened when the idle was set to so "lean" a mixture.[25] Various alternative idle adjustment methods

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[20] JA I:232-233, 249-250 (Dietrick testimony); JA V:1876-1879 (Chrysler Service Manual). *See also* JA II:582-583, 586-587, 589 (Gockel testimony).

[21] Chrysler disputes EPA's conclusion that the procedure is cumbersome and difficult to perform. One Chrysler engineer described the procedure as "relatively simple," JA II:829 (Freers statement); another said that the procedure could be "done by a normal guy with normal equipment," JA I:14 (Heinen testimony); a Chrysler consultant said that "it is easy for a mechanic to make a quick and precise adjustment of the idle mixture," JA I:88 (Brubacher testimony). Significantly, none of the Chrysler experts testified that it is easy to achieve satisfactory driveability when the idle is adjusted to Chrysler's specifications.

[22] JA V:1977; *see* JA I:370, 401 (Gockel testimony).

[23] JA I:401 (Gockel testimony).

[24] JA I:370 (Gockel testimony).

[25] *See* text and notes at notes 39-43 *infra*.

employed by mechanics for many years are both less time-consuming and less likely to displease the customer.[26] But as both EPA[27] and Chrysler[28] experts agree, alternative procedures are likely to produce mixtures "richer" than those needed by the emission control system.

Several specific factors make the required procedures more difficult to perform. First, the Administrator found that precisely calibrated and fully operating infrared analyzers are often unavailable, and that most dealers were not attaching the analyzers to the upstream tap, as specified by Chrysler.[29] Evidence in the record shows that 41 percent of nondealership service facilities lacked such analyzers as of August 1975.[30] Moreover, in 1975 Chrysler undertook a survey of emission testing equipment at 39 dealerships; that survey revealed that "[a] significant number of analyzers had leaks in the sampling systems large enough to cause incorrect readings." JA V:2001. One dealer in the survey had no analyzer at all; one had a "totally inoperative" analyzer; one had an analyzer so unstable that it could not be checked; one had its analyzer at the shop for repairs. Eleven other

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[26] JA I:370, 401 (Gockel testimony). *See* JA III:1223 (Decision and Order). This problem may be compounded by the ignorance of many mechanics concerning the effect of the idle adjustments on carbon monoxide emissions. Only six of 27 dealership mechanics surveyed realized that a "rich" idle mixture will cause the catalytic converter not to work at idle; 13 actually stated that a "rich" mixture would make the catalyst work harder. JA V:1980.

[27] JA I:370-371 (Gockel testimony); JA I:434 (DeKany testimony).

[28] JA I:86 (Brubacher testimony); JA I:98-104 (Freers testimony).

[29] JA III:1222 (Decision and Order).

[30] JA I:251 (Dietrick testimony) (citing a survey conducted by Bendix Corporation under contract to EPA).

analyzers at the dealerships had major failings, such as faulty calibration or a sticking carbon monoxide meter.[31] The Chrysler engineer analyzing the results flatly stated that "routine maintenance of the instruments is not performed." JA V:2001 (memorandum from A. T. Weibel to W. S. Fagley). These results are corroborated by tests undertaken by California and New Jersey.[32] Moreover, a majority of mechanics at Chrysler dealerships did not regularly use the exhaust analyzer at the catalyst probe, as required by Chrysler's instructions.[33]

A second special problem with the emission control system adopted by Chrysler is that the carburetor adjustment screws are so sensitive that tiny rotations of the screws will grossly affect the idle fuel-air mixture. A mere 1/20 of a turn of the mixture screws above Chrysler's specified adjustment range will cause a substantial increase in idle carbon monoxide.[34] A full rotation of the screw will produce an idle carbon monoxide level about 23 times Chrysler's specifications.[35] Chrysler attempts to pass this problem off, saying that it merely

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[31] JA I:251-252 (Dietrick testimony) (summarizing data from Chrysler survey, JA V:1997-2002). These results seemingly conflict with Chrysler's conclusion from the survey that "most analyzers were in operating condition and working with sufficient accuracy for the use for which they were intended." JA V:2001 (memorandum from A. T. Weibel to W. S. Fagley).

[32] The California report, JA V:1881, stated that "the emissions analyzers in these facilities were in such poor condition that [the Air Resources Board required] the repair and recalibration of 80% of the emissions analyzers." JA V:1882. *See also* JA V:1883 (New Jersey report).

[33] JA V:1978 (EPA survey); JA V:2001 (Chrysler survey).

[34] JA I:372 (Gockel testimony).

[35] JA I:243 (Dietrick testimony).

causes the adjustment procedure to "take slightly longer." Brief of petitioner at 65. But the sensitivity of the adjustment screws is more significant than Chrysler is willing to admit. In order for the emission control system to work, the idle mixture must be set precisely, within very narrow limits. The hypersensitivity of the screws makes misadjustments far more likely, especially if mechanics are inexperienced or pressed for time.

Chrysler attempted to alleviate the adjustment problem by installing plastic limiter caps on the idle adjustment screws. Ideally, such caps would prevent the mechanic from turning the screws to a mixture "richer" than specification. But the limiter caps are easily removed or damaged [36]; indeed, the mechanic must remove the caps in order to make certain repairs.[37] Moreover, Chrysler's limiter caps were such that even when in place they permitted adjustment of the idle mixture to levels many times "richer" than Chrysler's specifications.[38]

Most important, the Chrysler procedure often disrupts the vehicles' smooth operation. Generally speaking, a vehicle drives more smoothly and has a smoother idle with a relatively "rich" fuel-to-air mixture. "Lean" settings such as those specified by Chrysler often generate "driveability" problems and hence customer dissatisfaction. The recall class vehicles are adjustable to any setting between 0 and 8 percent carbon monoxide, as

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[36] JA I:242 (Dietrick testimony).

[37] JA III:1222 (Decision and Order); *see also* JA V:1978-1979 (survey of dealership mechanics).

[38] JA III:1190 (Initial Decision, Finding of Fact No. 102). *See* JA I:241-242 (Dietrick testimony) (with limiter cap in place, idle mixture could be set to an idle carbon monoxide level 10 times Chrysler's specification).

measured at the tailpipe, with "best idle" occurring between 5 and 8 percent. In contrast, the setting required for effective operation of the catalytic converter is 0.3 percent idle carbon monoxide, as measured upstream of the catalyst.[39] As a Chrysler engineer admitted, the "lean" idle setting specified by Chrysler "certainly affects idle quality." JA II:875 (Harris testimony). He stated that "rich adjustment towards the area of best idle will produce better idle by definition than a leaner setting." JA II:877. In particular, he noted that at leaner settings it becomes more important to balance the carburetor precisely, so as to deliver the same fuel-air mixture to all of the cylinders. At a "lean" mixture it becomes "more likely that one cylinder or two cylinders might not be receiving the proper fuel distribution." JA II:875. Thus the idle is more likely to be rough and uneven. A large majority of dealership mechanics surveyed by EPA stated that it is not possible to achieve "acceptable engine smoothness and driveability" when the idle mixture is adjusted to Chrysler's specifications.[40] The mechanics also said that customers complain of rough idle, hesitation, poor performance, or surge when the

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[39] JA III:1189 (Initial Decision, Findings of Fact Nos 95-96). Although the former measure of carbon monoxide was taken at the tailpipe and the latter was taken upstream of the catalyst, the results are comparable. A 0.3% carbon monoxide concentration upstream of the catalyst should generally result in close to a 0.0% reading at the tailpipe. *See* note 56 *infra*.

[40] When asked "Is it possible to achieve acceptable engine smoothness and driveability when you adjust according to manufacturer's procedures and specifications?" only two of the 27 mechanics surveyed answered "yes." Fifteen answered "no"; six answered "not all of the time"; and four answered "most of the time." JA V:1977.

idle mixture is properly set.[41] A significant majority admitted that they do not use the specified Chrysler procedure for adjusting the idle mixture.[42] More than two-thirds of the mechanics said that they "often" or "always" remove the carburetor limiter caps in order to make a good idle adjustment,[43] thereby indicating that they must set the idle mixture far "richer" than operation of the emission control system would permit. As the Administrator said, "Given customer dissatisfaction with the idle quality and the fact that the best idle quality is achieved at an idle setting far richer than Chrysler's specifications, mechancis are motivated to misadjust the vehicles." JA III:1219 (Decision and Order).

In comparison, most Ford vehicles in the 1975 model year were equipped with air pumps,[44] which obviate the need for precise carburetor adjustments to extremely "lean" idle mixtures. Since air pumps provide sufficient oxygen to the catalytic converter, the idle can be set at a "richer" mixture, as driveability seems to require, without disabling the emission control system.[45] Other undesirable features of the Chrysler system were also absent from most of the systems made by Chrysler's competitors. A Chrysler expert admitted that most of the

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[41] All 27 mechanics said that customers complain when the carburetor is adjusted to manufacturer's specifications. Twenty-three had received complaints of "rough" idle. Other complaints were of "hesitation," "poor performance," and "surge." JA V:1977.

[42] JA V:1978.

[43] JA V:1978.

[44] JA II:541 (Dietrick testimony). EPA has incorrectly stated that Ford "used air pumps on *all* of its 1975 cars." Brief of respondents at 23 n.31 (emphasis added). This overstatement is contradicted by EPA's own witness, Mr. Dietrick.

[45] JA III:1224 (Decision and Order).

idle mixture screws used by other manufacturers were "substantially" less sensitive than that used by Chrysler.[46] The limiter caps used by other manufacturers—unlike those used by Chrysler—would not permit the adjustment screws to be adjusted beyond the manufacturer's specifications.[47] Moreover, Chrysler was the only domestic auto manufacturer to install a system requiring use of an exhaust analyzer at the upstream tap.[48]

B. *Performance and Testing of the Recall Class.*

EPA approved the prototypes of recall class vehicles submitted for initial examination and issued them a certificate of conformity.[49] However, at the second stage of testing Chrysler and EPA received preliminary indications that the emission control system of the recall class might not perform as well as expected. Early in 1975 Chrysler submitted data to EPA from tests of the vehicles as they came off the assembly line. These tests, conducted in accordance with the "Federal Test Procedure," *see* 40 C.F.R. § 85.075-9 (1976),[50] involved a simulated seven-mile driving cycle performed on a dyna-

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[46] JA II:676 (Cook testimony); *see also* JA I:253 (Dietrick testimony). But Chrysler also presented testimony that the angle of its idle mixture screw was within the "state of the art." JA I:29-30 (Cook testimony); *see also* JA IV:1567-1572 (charts showing idle adjustability of different carburetor models).

[47] JA III:1191 (Initial Decision, Finding of Fact No. 104).

[48] Chrysler admits that no domestic manufacturers employed this procedure, but points out that several foreign manufacturers did so. Reply brief of petitioner at 33.

[49] JA III:1171 (Initial Decision, Findings of Fact Nos. 3-4; *see also* JA I:142-162 (Kohnken deposition concerning the initial examination of the recall class prototypes).

[50] *Cf.* 40 C.F.R. § 86.127-78 (1979) (current overview of testing procedures).

mometer.[51] Examination of the exhaust emitted by the vehicles during the simulation revealed that approximately 45 percent of the recall class vehicles coming off the assembly line did not conform to the carbon monoxide emission standard.[52] Chrysler attributed this high failure rate to the newness of the vehicles, which the company predicted would conform after being driven sufficiently to be broken in.[53] In addition, EPA received reports from four states which conducted "short" tests indicating that a large percentage of 1975 Chrysler vehicles in actual use, including those in the recall class, greatly exceeded the idle carbon monoxide concentration level specified by Chrysler, and thus were highly likely to be in violation of the federal standards.[54] Chrysler attributed these results to test conditions in the state programs and to carburetor misadjustments in the field.[55] On the basis of these early reports EPA initiated an investigation of the recall class.

The EPA investigators used data from a variety of testing programs conducted by Chrysler, four states, and EPA itself. In addition to the Federal Test Procedure

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[51] The Federal Test Procedure takes about 12 hours to complete, and measures the mass of carbon monoxide in the exhaust emissions, expressed in grams per mile. An alternative "short" test, used by many states, takes about one minute to complete, and measures the concentration of carbon monoxide in the emissions, expressed in percentage carbon monoxide. The "short" test has been determined to correlate with the Federal test. JA I:194-195 (Dietrick testimony).

[52] JA I:195 (Dietrick testimony) (summarizing Chrysler test data).

[53] JA I:196 (Dietrick testimony).

[54] JA I:195-196 (Dietrick testimony).

[55] JA I:196 (Dietrick testimony).

results discussed above, Chrysler submitted the results of "short" tests conducted at the assembly line, at its new car preparation center in Chicago, and at five representative dealerships in Chicago. In each instance Chrysler discovered that many of the vehicles in the recall class exceeded Chrysler's specified idle carbon monoxide adjustment. Significantly, many of the vehicles registered a carbon monoxide concentration in the exhaust of 1.0 percent or higher—a strong indication that the vehicles were in violation of the 15 grams per mile federal standard.[56] The results of these tests may be summarized in tabular form:

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[56] Chrysler specifies that the idle mixture should be adjusted to register 0.3% carbon monoxide concentration in the exhaust, as measured upstream of the catalyst. *See* text at note 17 *supra*. This translates roughly into a 0.0% carbon monoxide concentration, as measured at the tailpipe, JA I:188 (Reichlen testimony), and a carbon monoxide emission of less than 12 grams per mile, JA II:721-722 (Goodwillie testimony). An idle mixture setting that registers 1.0% or more carbon monoxide concentration as measured at the tailpipe is highly likely to cause a violation of the standards, according to an EPA analysis. JA I:430, 439 (DeKany testimony); *cf.* JA II:722 (Goodwillie testimony). The ALJ found that 1.0% carbon monoxide tailpipe concentration is equivalent to approximately 17 grams per mile of carbon monoxide emissions. JA III:1176 (Initial Decision, Finding of Fact No. 28). Chrysler witnesses claimed that the point at which federal standards would be clearly violated is somewhere between 1.5 and 2.0% carbon monoxide. JA III:1228-1229 (Decision and Order). For purposes of reaching his decision, the Administrator opted for the higher figure. *Id.* The Chrysler idle test results, however, use the lower figure. We observe that every vehicle exceeding 1.0% carbon monoxide under the "short" test that was also tested under the "Federal" procedure exceeded the 15 grams per mile standard. JA III:1229 n.55 (Decision and Order).

Chrysler "Short" Test Results [57]

Number and Type of Vehicle	Percentage Misadjusted	Percentage Over 1.0% CO
Off Assembly Line:		
67 360 CID vehicles	46%	27%
78 400 CID vehicles	27%	17%
At New Car Preparation:		
48 360 CID vehicles	33%	27%
38 400 CID vehicles	18%	18%
At Dealers:		
14 360 CID vehicles	29%	29%
15 400 CID vehicles	33%	27%

These results tend to indicate that many vehicles in the recall class were in violation of federal emission standards even before passing into the hands of purchasers.[58]

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[57] These data are derived from JA V:1812-1858 (Chrysler Idle Test Data); JA III:1182-1183 (Initial Decision, Findings of Fact Nos. 59-62); JA I:211-213 (Dietrick testimony). Since the tests were performed by Chrysler personnel, sometimes after giving warning to the dealers or preparation centers, the results might well understate the severity of the misadjustments. *See* JA I:213 (Dietrick testimony).

[58] We note that the Administrator expressly declined to rely on this evidence of misadjustment prior to delivery of the vehicles to the ultimate purchasers:

> The presiding officer also relied upon short-test data to support conclusions that the recall class vehicles are misadjusted on the assembly line or otherwise before delivery to the purchaser. However, these conclusions are based on idle CO concentration levels averaging less than 1.0%, only a small percentage of which exceed 1.0%. As previously indicated, idle CO measurements at levels below 1.5-2.0% have not been adequately shown by the limited evidence in the record to reliably predict an FTP failure when employed outside the laboratory. Consequently, I decline to accept these data as a basis for concluding that misadjustments are occurring on the assembly line, at new car prep centers, or at Chrysler

In the Washington, D.C. area EPA conducted a "short" test of recently purchased recall class vehicles. The test revealed misadjustments even more prevalent than those indicated by the Chrysler test results. Of 18 vehicles tested, 10 had received no maintenance from their owners that might affect the idle mixture, while 8 had received such maintenance. Ninety percent of the vehicles in the former category were found to be misadjusted; the average idle carbon monoxide concentration of the vehicles, as measured at the tailpipe, was 3.2 percent. Half of the vehicles that had received relevant maintenance were found to be misadjusted; the average carbon monoxide concentration was 1.8 percent.[59]

"Short" tests performed by state personnel and EPA contractors in Oregon, Ohio, Illinois, and New Jersey revealed that more than 64 percent of the tested 360 CID vehicles in the recall class, and more than 50 percent of the 400 CID vehicles, registered over 1.0 percent carbon monoxide concentration, as measured at the tailpipe.[60]

EPA conducted two major tests of the recall class, on which the ALJ and the Administrator primarily relied in reaching their decisions: the Emission Factor Program and the Olson Program. The Emission Factor Program tested randomly selected vehicles by various

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dealerships before delivery of the vehicle to the purchaser. As noted by Mr. John P. DeKany, then Director of EPA's Emission Control Technology Division, ". . . definitive proof [of correlation at the 1.0% CO level] must await completion of . . . [another] program."

JA III:1232-1233 (Decision and Order) (footnotes omitted; elipses and brackets in original).

[59] JA V:1693-1694 (new car survey); *see* JA I:213-215 (Dietrick testimony); JA I:186-189 (Reichlen testimony).

[60] JA III:1176 (Initial Decision, Findings of Fact Nos. 28-29).

manufacturers in actual use in four different cities, without regard to their histories of maintenance or use.[61] It was conducted by independent testing laboratories under contract to EPA, with some participation by EPA personnel.[62] The investigators tested vehicles under the "Federal" procedure and other procedures, including the "short" test.[63] Eighty-five percent of the recall class vehicles registered carbon monoxide emissions in excess of the 15 grams per mile standard, under the "Federal" procedure. The average emission of all recall class vehicles tested was over 48 grams per mile. Under the "short" test 77 percent of the recall class vehicles registered excessive carbon monoxide concentration.[64]

Unlike the Emission Factor Program, the Olson Program was specifically designed to test whether vehicles in the recall class, although properly maintained and used, were in violation of the carbon monoxide emission standards.[65] EPA contracted with Olson Laboratories of Livonia, Michigan to conduct the test. Olson personnel obtained a randomly-ordered list of owners of all recall class vehicles in Wayne County, Michigan, and contacted these owners by letter and telephone in an attempt to

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[61] JA I:261-265 (White testimony). The random selection process broke down in several instances, notably in Chicago and St. Louis, where the investigators had to resort to media publicity and other methods to procure sample vehicles. JA II:522-523, 528-529 (White testimony). Although vehicles were not excluded from the test because of improper maintenance, EPA required owners to fill out a questionnaire concerning maintenance both before and after the test.

[62] JA I:260 (White testimony).

[63] JA I:196-197 (Dietrick testimony).

[64] JA III:1175 (Initial Decision, Findings of Fact Nos. 22-23); JA I:197 (Dietrick testimony).

[65] JA I:197 (Dietrick testimony).

persuade them to participate.[66] On the basis of questionnaires and inspections EPA personnel eliminated all vehicles that failed certain criteria, including some maintenance requirements.[67] Vehicles not falling within these exclusionary criteria were tested by Olson, EPA, and Chrysler personnel. If these investigators found any disablement of the emission control system or other tampering, they eliminated the tampered vehicle from the test.[68]

The distinctive feature of the Olson Program was that the investigators tested vehicles in the condition in which they were received, then performed extensive maintenance, including adjustments of the idle mixture in accordance with Chrysler's specifications, and finally tested them a second time. In this way EPA could determine the effect of maintenance and idle adjustment on carbon monoxide emissions. Before receiving maintenance 90 percent of the vehicles tested in the Olson Program ex-

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[66] These procedures are described in detail by Mr. Dietrick, who conducted EPA's investigation of the recall class, JA I: 224-227, and by Mr. Nussbaum, who designed the procedures, JA I:297-311.

[67] Vehicles were rejected from the sample if: (1) they had not been operated in accordance with Chrysler's instructions, for example, if they had been run on leaded gasoline or had been improperly used to tow trailers; (2) they had been rented or leased; (3) their emission control systems had been damaged by accident; (4) they had been driven over dirt roads more than half of the time; (5) they had been operated in a competitive speed race; (6) they had not been taken in for oil changes or tuneups at the recommended intervals; (7) their engines had received major damage or a major overhaul; (8) they had not been purchased new from a dealer; (9) they had been driven less than 1,000 or more than 50,000 miles; or (10) their emission control systems were disabled. JA I:229-230 (Dietrick testimony).

[68] JA I:230-231 (Dietrick testimony).

ceeded carbon monoxide emission standards.[69] After maintenance only 25 percent of the tested vehicles failed to satisfy the standards.[70] The results may be summarized in tabular form:

Olson Testing Program [71]

Number and Type of Vehicle	Percentage in Violation	Average CO Emissions
As Received:		
10 360 CID vehicles	100%	69.02 grams/mile
10 400 CID vehicles	80%	33.61 grams/mile
After Maintenance:		
10 360 CID vehicles	20%	11.35 grams/mile
10 400 CID vehicles	30%	15.45 grams/mile

The Administrator has called the Olson test results "[t]he most decisive and objective evidence establishing the high number of misadjustments * * *." JA III:1225.

Of the 46 vehicles tested in the Emission Factor and Olson Programs, 37 had logged fewer than 15,000 miles.[72] Since the 15,000-mile point is the first occasion when owners are instructed to readjust the idle mixture,[73]

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[69] JA I:197 (Detrick testimony); JA III:1174 (Initial Decision, Finding of Fact No. 20). Eighteen of the 20 vehicles were set to idle mixtures "richer" than Chrysler's specifications; all of these vehicles exceeded federal carbon monoxide emission standards. Of the two vehicles set to Chrysler's specifications, one met the standards and one exceeded the standards by a small amount (15.61 grams per mile as compared with the 15 grams per mile standard). JA I:359-360 (Gockel testimony). For statistical purposes, the latter vehicle is counted as meeting the standards.

[70] JA I:360 (Gockel testimony).

[71] The data are derived from the Administrator's decision, JA III:1226.

[72] JA I:204 (Dietrick testimony).

[73] JA V:1695-1696 (Chrysler Owner's Manual).

vehicles logging fewer than 15,000 miles might be viewed as "properly maintained." Moreover, all nine of the vehicles logging more than 15,000 miles had been taken to service facilities for a tune-up, in accordance with Chrysler instructions—seven of them to Chrysler dealerships.[74] A large percentage of the tested vehicles—65 percent of the Olson vehicles and 38 percent of the Emission Factor vehicles—had received unscheduled maintenance relating to the carburetor or tuning because of owner complaints concerning such driveability problems as hesitation, rough idle, stalls, hard starting, pinging, and poor fuel economy.[75]

Evidence suggests that the misadjustments occurred to some degree on the assembly line, and that they tended to become statistically more severe as mileage accumulated. A compilation of Chrysler, state, and EPA test results, correlated according to vehicle mileage, may be summarized in tabular form:

Test Summary [76]

Mileage	No. of Vehicles	Average Idle CO	Percentage Misadjusted	Percentage Over 1% CO
0-1,000	17	1.9%	65%	65%
1,000-5,000	37	2.2%	73%	68%
5,000-10,000	25	2.9%	72%	72%
10,000-15,000	20	3.1%	75%	75%
Over 15,000	10	4.3%	90%	90%

Evidence in the record indicates that these results are representative of cities all across the nation.[77]

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[74] JA I:204 (Dietrick testimony).

[75] JA I:207-208 (Dietrick testimony).

[76] The data are compiled at JA I:216 (Dietrick testimony), and derive from studies reported at JA V:1685-1694; *see also* JA III:1112 (Initial Decision).

[77] JA I:216-217 (Dietrick testimony); *see* JA III:1112 (Initial Decision).

EPA performed a statistical analysis of the results of the Emission Factor and Olson Programs. This analysis revealed, with 95 percent confidence, that no fewer than 79 percent of all 360 CID vehicles in the recall class, and no fewer than 62 percent of all 400 CID vehicles in the recall class, violate the carbon monoxide emission standards when in actual use. Using only the Olson Program results, EPA was able to project with 95 percent confidence that no fewer than 79 percent of the 360 CID, and no fewer than 49 percent of the 400 CID, vehicles in the recall class violate the standards in actual use.[78]

III. The Order Under Review

A. *The Notice of Noncomformity*

Relying on the results of state tests, the Emission Factor Program, and the Olson Program, the EPA Administrator, then Russell E. Train, issued a letter on December 8, 1976 instructing Chrysler to submit a plan for remedying the nonconformity of the recall class. The Administrator said that the test results showed "that a substantial number of vehicles in [the recall class] are exceeding the 1975 Federal carbon monoxide standard in actual use," and that "carburetor idle CO misadjustment is the primary cause of the nonconformity of these vehicles." JA III:912. He noted that misadjustment of the vehicles might be taken as proof that they had not been "properly maintained" under the statute, but he stated that Chrysler must nevertheless be considered liable to a recall action. He reasoned:

> Chrysler is responsible for these misadjustments because Chrysler as an automobile manufacturer should have foreseen that its carburetor design and adjustment procedures would cause widespread misadjust-

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[78] JA III:1175 (Initial Decision, Findings of Fact Nos. 25-26); *see* JA I:319-347 (Singpurwalla testimony).

ments and because of the agency relationship which exists between Chrysler and its authorized dealerships.

JA III:912-913.

Chrysler took issue with the Administrator's determination and demanded a public hearing before an ALJ, as provided in Section 207(c)(1) of the Act, 42 U.S.C. § 7541(c)(1) (Supp. II 1978), and EPA regulations, 40 C.F.R. § 85.1807 (1979).

B. *The Initial Decision*

The case was assigned to ALJ Edward B. Finch. Both parties undertook extensive discovery, over which several disputes arose. Most important, Chrysler was not permitted to obtain some 20 EPA documents or to depose Mr. Eric Stork, head of the EPA team that certified the recall class.[79] After four prehearing conferences and a lengthy public hearing in which Chrysler and EPA were the only parties, the ALJ issued an Initial Decision in favor of EPA ordering Chrysler to submit a recall plan in accordance with Section 207(c)(1). JA III:1090-1196. The ALJ delineated two major disputed issues: first, whether the test vehicles that served as the basis for the Administrator's notice of nonconformity were "properly maintained" within the meaning of Section 207(c)(1), and second, assuming that those vehicles had been "properly maintained," whether there was sufficient evidence to support the Administrator's decision that there were "a substantial number" of vehicles in the recall class that

[79] *See* JA III:923 (Chrysler's motion to compel production of documents); JA III:985, 1002 (ALJ's orders granting Chrysler's motion in part and denying it in part). Chrysler applied to the Administrator for an interlocutory appeal, which was denied. JA III:1086.

"do not conform" to the federal carbon monoxide emission standards.[80]

EPA urged the ALJ to adopt a definition of "properly maintained" that would refer solely to the actions of the vehicle owner in taking his car to a bona fide service station for Chrysler's recommended maintenance at the recommended time intervals without regard for whether the maintenance was performed properly or not. The ALJ rejected this argument, holding that "it is the actual maintenance performed on the vehicle which is the determining factor." JA III:1102. He concluded that "the phrase 'properly maintained' has a technical meaning within the automobile industry and, when used within that industry, means 'maintained in accordance with the manufacturer's [instructions or] specifications.'" JA III:1101 (brackets in original).[81] However, the ALJ ruled in effect that vehicles logging less than 15,000 miles should automatically be considered "properly maintained" because Chrysler does not require readjustment of the idle setting within the first 15,000 miles of operation.[82]

Using this definition of "properly maintained," the ALJ found substantial evidence supporting the conclusion

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[80] JA III:1092-1093 (Initial Decision). The ALJ also discussed a third issue: whether Chrysler's maintenance instructions to the ultimate purchaser were "reasonable and necessary to assure the proper functioning of emission control devices and systems" within the meaning of § 207(c)(3). He stated that this issue was not in dispute: that both parties agree that Chrysler's maintenance instructions were "reasonable and necessary." JA III:1092-1093 (Initial Decision).

[81] The ALJ thus construed the recall provision of § 207(c)(1) to accord with the warranty provision of § 207(b). *See* JA III:1099-1100. However, the ALJ held that the burden of proof on EPA, as a third party, is lower in a recall action than that on a vehicle owner in a warranty action. He held that EPA "need only show by documentation or other relevant evidence, substantial compliance with the manufacturer's instructions." JA III:1101.

[82] JA III:1103-1105.

that a substantial number of vehicles in the recall class do not conform to federal carbon monoxide emission standards. Relying on tests of low-mileage vehicles in the recall class conducted by four states and Chrysler, the ALJ determined that vehicles that "may be considered to have been properly maintained" under his definition —that is, vehicles logging less than 15,000 miles—demonstrated "gross conditions of idle misadjustment." JA III:1107.[83] Then, relying solely on the Olson and Emission Factor Programs, as analyzed in accordance with standard statistical techniques, he concluded that a "substantial number" of vehicles in the recall class failed to conform to the emission standards.[84] For this purpose he disregarded the state and Chrysler investigations that used the tailpipe exhaust, or "short," method because he did not believe that the 1.0 percent carbon monoxide concentration cutoff point used by those tests was sufficiently reliable evidence of failure to meet the federal emission standards.[85] The ALJ rejected all challenges to the vali-

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[83] Chrysler argued that many of the low mileage vehicles tested had received unscheduled maintenance, *see* text at note 75 *supra*, that this maintenance was often conducted improperly, and thus that such vehicles should not be considered "properly maintained" for purposes of a recall. The ALJ rejected this argument, saying that "[w]hile the unscheduled maintenance may have been incorrect maintenance, Chrysler has not shown by any affirmative evidence that this fact is true. It would seem that in order to satisfy the customer it was the only maintenance under the circumstances when carburetor design, etc., are considered." JA III:1113-1114.

[84] JA III:1146-1148. The ALJ rejected Chrysler's argument that EPA must demonstrate that 50% or more of the recall class are in violation of the standards. JA III:1140-1145.

[85] *See* note 56 *supra*. Although the ALJ found the "short" tests "sufficient to indicate that an emission problem exists," he held that "they are not sufficient to enable these numbers of vehicles to be used in support of the 'substantial number' criterion of Sec. 207(c)(1)." JA III:1124.

dity of the Emission Factor [86] and Olson [87] Programs.

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[86] Chrysler criticized the sampling technique, testing procedure, and inclusion of improperly maintained vehicles in the Emission Factor Program. The ALJ concluded, however, that there was no pre-selection of vehicles for the test, and therefore that the sampling technique was accurate for its purposes. JA III:1127. The ALJ also concluded that the slight deviations from the "Federal" test procedure either had no impact on the Emission Factor results or were *more* stringent than the usual procedure. Finally, he concluded that owner questionnaires and Chrysler's maintenance and warranty records were sufficient to determine that the recall class vehicles tested in the program were "properly maintained." JA III:1129.

[87] In its attack on the validity of the Olson Program Chrysler argued, first, that the use of a single test site made the test geographically unrepresentative. JA III:1132. But the ALJ observed that evidence from other tests indicated that nonconformities exist to a large extent all over the country, and thus concluded that the Olson test site was representative. JA III:1133. He appeared to agree with Chrysler in theory concerning this apparent flaw in the testing procedures, but stated:

> I would agree with Chrysler if the test results of the recall class vehicles had not so conclusively shown that a substantial number of vehicles in this program were in nonconformity. It is doubtful if Wayne County residents and vehicle owners would be so completely irresponsible in the care of their vehicles so as to allow the conclusion that they are that different from the rest of the country. * * *

Id. Chrysler argued, second, that the large number of nonrespondents invalidated the results of the Olson Program. It produced evidence that the characteristics of nonrespondents to a survey offer differ significantly from those of respondents. JA III:1134. The ALJ stated that "precision in details is not required so long as the general, broad picture of the emission problem is accurately portrayed." JA III: 1136. He found that "EPA did everything humanly possible to obtain a random sample for its Olson testing program" and that "[t]here has been no purposeful bias shown to exist

Thus he reached a two-step conclusion: first, that idle misadjustments are characteristics of "properly maintained" vehicles, and second, that idle misadjustments have caused "a substantial number" of vehicles in the recall class to violate the carbon monoxide emission standards. Therefore, he found Chrysler liable to a recall action under the Act.

In addition, the ALJ held that Chrysler should be held responsible for nonconformities caused by idle misadjustments by owners and mechanics in the field. Relying primarily on precedents in the products liability area, he held:

> The Clean Air Act imposes a statutory obligation upon the manufacturer to design and produce a vehicle emission system which will, its useful life, conform to the applicable emission standards. Any failure to do so is noncompliance with the Act. The standards set forth in the Act are intended for the purpose of cleaning up the nation's air quality for the benefit of man and the environment. Any failure to accomplish such purpose by any means, including a "defect in design" carburetor, as here, constitutes a violation of the intended purposes of the Act for which liability attaches. * * *

JA III:1157-1158. EPA argued that Chrysler's emission control system design was faulty because it contained no mechanism to limit idle mixture, was overly sensitive to small turns of the adjustment screw and to temperature and idling time, and contained no alternative means of providing excess air to the catalyst in the event of misadjustment.[88] Because of these alleged design defects,

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which would invalidate the randomness of the sample obtained." *Id.* Moreover, EPA produced expert evidence that the sample vehicles in the Olson Program were representative of the recall class. *Id.*

[88] JA III:1148.

and tests showing that a substantial number of the recall class vehicles were in a state of misadjustment, the ALJ concluded "that the design of the emission control system, including the carburetor, encourages or fosters the gross misadjustments which have been shown to exist and therefore should have been foreseen." JA III:1158.[89]

The ALJ also concluded that Chrysler may be held responsible for misadjustments made by dealership mechanics because Chrysler dealers are agents of Chrysler in the performance of pre-delivery and warranty services and all emissions-related services.[90] He stated that Chrysler has the "right to control" dealership performance of these services,[91] and that members of the public reasonably rely on the dealers' skill and Chrysler's representations in servicing Chrysler cars.[92]

On the basis of these findings and conclusions the ALJ ordered Chrysler to submit a plan for remedying the nonconformity of the recall class, under Section 207 (c) (1).

C. *The Administrator's Decision and Order*

Chrysler appealed the Initial Decision of the ALJ to the EPA Administrator, Douglas M. Costle, on February 14, 1978. On the basis of appellate and supplemental briefs, but without hearing oral argument, the Administrator issued the order under review on November 20, 1978.[93]

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[89] The ALJ also placed "great weight" on the evidence that the infrared gas analyzer required for idle adjustment was not in widespread use as late as September 1975. JA III:1158.

[90] JA III:1159-1170.

[91] JA III:1166.

[92] JA III:1169.

[93] The Administrator's Decision and Order appears at JA III:1199-1260.

The Administrator acknowledged that the key issue in the proceeding was whether the vehicles in the recall class were "properly maintained" within the meaning of Section 207(c)(1).[94] He reviewed the interpretations of "properly maintained" urged by EPA and Chrysler,[95] and also that adopted by the ALJ,[96] but he found that "[t]he problem with all of these interpretations of the 'properly maintained' criterion is that they place undue emphasis on the text of the words 'properly maintained' without examining the purpose or function of the 'properly maintained' criterion in the overall statutory scheme." JA III:1211-1212.[97] He reasoned that the purpose of the

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[94] JA III:1200.

[95] EPA argued, as it had before the ALJ, that the phrase "properly maintained" refers solely to the owners' actions in taking the vehicle to a bona fide service facility, and does not refer to the nature of the maintenance actually performed. Chrysler argued, as it had before the ALJ, that if a vehicle is misadjusted then it is not "properly maintained." JA III:1209-1211.

[96] JA III:1207-1208.

[97] We are puzzled, therefore, by EPA's arguments in its brief at 60-63. It argues that the "properly maintained" criterion refers to proper maintenance only in relation to the instructions to the owners in the Owner's Manual, and not to maintenance by mechanics. *See* brief of respondents at 61-63. To the extent that the criterion relates to mechanics' actions, EPA asserts that it is satisfied when the "mechanics performed the repairs as reasonably as could be expected under the circumstances." *Id.* at 61. EPA presented these arguments to the ALJ; they were rejected. EPA presented these arguments again to the Administrator; again they were rejected. EPA is not free to present these arguments a third time to this court: the duty of the Agency attorneys is to defend the Decision and Order of the Administrator on the basis of his findings and legal conclusions. This court could not affirm the Decision and Order on the basis of EPA attorneys' twice-rejected theories of the case, even if we agreed with them.

"properly maintained" criterion of Section 207(c)(1) was "to allocate responsibility for emission nonconformities among the manufacturer, the vehicle owner and the mechanic." JA III:1212. The manufacturer should not have to bear the expense of a recall if the fault properly lies with the vehicle operator; on the other hand, if it is principally responsible for the nonconformity the manufacturer should be held accountable, even if the nonconformity relates to maintenance of the vehicle. Otherwise, the manufacturer would be able to avoid its duty to make vehicles that would conform to the emission standards during their useful life, and could frustrate the purpose of the Act.[98] Thus the Administrator interpreted Section 207(c)(1) as imposing recall liability on the manufacturer for maintenance-related nonconformities only if EPA could establish that the vehicles would have been maintained properly *"but for the actions of the manufacturer."* JA III:1215 (emphasis in original). He described EPA's burden of proof as the presentation of "affirmative evidence" that the manufacturer is "primarily responsible for the condition of improper mainteance." *Id.* In the case at bar the Administrator found that such affirmative evidence had been presented. He concluded, on the basis of the record, that "[w]hile that evidence also shows that the service industry does indeed contribute to the condition of improper maintenance * * *, it is clear that the service industry's contribution is the inevitable byproduct of Chrysler's emission system design and service procedures." *Id.*

In reaching this conclusion the Administrator painstakingly reviewed the evidence in the record concerning the alleged design defects in the Chrysler emission control system, including the length and difficulty of the idle adjustment procedure, the inadequacy of the plastic limiter caps, the lack of reliable infrared exhaust

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[98] JA III:1212-1214, 1216.

analyzers, the sensitivity of the adjustment screws, and the failure to install an air pump.[99] Focusing on the difficulty of sufficiently precise adjustment and resulting customer dissatisfaction, the Administrator found that these factors, "inherent in the recall class vehicles," made the likelihood of proper adjustment "exceedingly small" for vehicles in actual use. JA III:1218.[100]

Having attributed responsibility for idle misadjustments to Chrysler, the Administrator easily found sufficient evidence in the record to support a finding that a substantial number[101] of vehicles in the recall class were in violation of the emission standards as a result of such misadjustment. He relied primarily on the Olson Program to support his conclusion,[102] but found that other testing programs, including those using the "short" test, could be used to corroborate the Olson Program result: namely, "that a high number of the recall class vehicles in the field are in a condition of misadjustment." JA III:1231. The Administrator found, on the basis of the evidence from these tests, that the misadjustments were uniformly prevalent throughout the country,[103] and that

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[99] JA III:1218-1224; *see* Part II-A *supra*.

[100] The Administrator expressly declined to accept the ALJ's conclusion that misadjustments had occurred on the assembly line, at new car preparation centers, or at Chrysler dealerships prior to delivery to the ultimate purchasers, because this conclusion was based on data from "short" tests using a 1.0% carbon monoxide concentration level as a benchmark. JA III:1233.

[101] The Administrator found it unnecessary to define a "substantial number" in this case, JA III:1250, but said that it "may vary from case to case" and that the "primary consideration is whether the number is sufficient to demonstrate the existence of an 'emissions related problem.'" JA III: 1251.

[102] JA III:1225.

[103] JA III:1232.

they increase in frequency and severity as the mileage of the vehicles increases.[104]

Chrysler argued that the results of the Olson Program tests performed on vehicles *after* maintenance in accordance with Chrysler instructions supported its contention that most vehicles in the recall class pass the emission standards when properly maintained. As we have noted, after maintenance about three-quarters of the recall class vehicles satisfied the standards.[105] The Administrator, however, concluded that the maintenance performed on the vehicles during the Olson Program was not the type of maintenance contemplated by Section 207(c)(1) of the Act. He said that

> the recall determination must be based upon a finding that a substantial number of vehicles exceed the applicable emission standard when "in actual use," although properly maintained and used. * * * Maintenance in actual use is where all of the factors that have been previously identified as contributing to the cause of misadjustments will combine and represent the true state of maintenance being performed on the recall class vehicles. The sensitivity of the adjustment screws, the inconvenience involved in attaching the exhaust gas analyzer at the tap in front of the catalyst, the pressure to satisfy the customer, and the incentives to complete the task in an expeditious manner all interact in a way that is totally

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[104] JA III:1231. The Administrator rejected Chrysler's arguments that the Olson and Emission Factor Programs used too small and unrepresentative a sample to support EPA's conclusions, for much the same reasons given by the ALJ. JA III:1245-1250; *see* notes 86-87 *supra*.

[105] *See* table at note 71 *supra*. Applying standard statistical analysis to these data, Chrysler computed that it can be projected with 95% confidence that approximately 3.7% of the 360 CID and 8.3% of the 400 CID vehicles in the recall class would fail the standards. *See* JA III:1242.

> unlike the maintenance performed in the Olson Program.

JA III:1244. Thus the Administrator relied on the "as received" portion of the Olson tests in reaching his determination.

The Administrator analyzed at length the expert testimony by Chrysler and EPA witnesses concerning the foreseeability of misadjustments of the idle mixture, given the design of the recall class.[106] He discounted the testimony of three main Chrysler witnesses and credited the testimony of EPA witnesses that the carburetor design necessarily encouraged or fostered misadjustment and should have been known by Chrysler to do so. He stated:

> * * * The evidence presented by EPA in the form of expert opinion and other proof convinces me that Chrysler should have foreseen the possibility of widespread misadjustments occurring in the recall class vehicles due to the combined effects of the various factors described above and further that such misadjustments would result in a substantial number of the recall class vehicles exceeding the Federal emission standard for carbon monoxide. * * *

JA III:1233.

Chrysler also argued that requiring a recall in this case is tantamount to retroactive rulemaking because EPA has issued new regulations that require manufacturers to construct all vehicles to meet emission standards even when misadjusted. 44 FED. REG. 2960 (1979). Chrysler suggested that the order now under review is, in effect, an application of this prospective rule to a past model year. The Administrator rejected this argument, saying, "The recall order is based on the fact that the defective design and service procedures *induced* misad-

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[106] JA III:1233-1239.

justments, not on the fact that the design merely *allowed* misadjustments." JA III:1257 (emphasis in original). He also rejected Chrysler's allegations of material evidentiary and discovery errors on the part of the ALJ,[107] and declined to rule on EPA's theory—adopted by the ALJ—that Chrysler was responsible for the misadjustments made by Chrysler dealers because such dealers are agents of Chrysler for the purpose of maintaining emission equipment.[108]

The Administrator therefore affirmed the ALJ's order and required Chrysler to submit a plan for correcting the nonconformities of the recall class.[109]

D. *The Denial of Chrysler's Motion for Reconsideration*

On December 17, 1978, about one month after the Administrator released his Decision and Order in this case, EPA published a study entitled "Motor Vehicle Tampering Survey" concerning the problem of tampering with emission control systems of vehicles made by all major manufacturers.[110] Claiming that the survey introduced new evidence relevant to this case, Chrysler petitioned the Administrator for reconsideration of his Decision and Order. Chrysler contended that the survey showed that tampering with emission control systems was an industry-wide phenomenon, in no way encouraged or caused by defects in Chrysler's carburetor design.[111]

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[107] JA III:1258-1259.

[108] JA III:1256-1257.

[109] JA III:1259-1260. The Administrator adopted the ALJ's findings and conclusions insofar as they were consistent with the Decision and Order.

[110] The survey is reprinted at JA IV:1575-1684.

[111] *See* JA III:1263-1264 (Denial of Motion for Reconsideration). Chrysler also made other arguments pertaining to matters already addressed by the Administrator. JA III:1263.

The Administrator denied Chrysler's motion for reconsideration. He analyzed the underlying raw data of the "Motor Vehicle Tampering Survey" and found that Chrysler vehicles of the 1975 model year averaged 3.87 percent carbon monoxide at idle. In contrast, 1975 General Motors vehicles averaged 1.72 percent and Ford vehicles averaged 0.88 percent.[112] He therefore found no reason to depart from his earlier findings and conclusions.

This petition for review followed.

IV. The Meaning of the "Properly Maintained" Criterion in Section 207(c)(1)

A. *Scope of Review*

This case is the first contested recall action under Section 207(c)(1) to reach the courts, and we have little precedent to guide us in deciding it. The only authoritative interpretation of the relevant portions of the Act is that adopted by the Administrator in the order under review. We must accord his interpretation "important but not controlling signficance." *Batterton v. Francis*, 432 U.S. 416, 424 (1977); *see also Griggs v. Duke Power Co.*, 401 U.S. 424, 433-434 (1971). As the Supreme Court has said, "It is the settled rule that the practical interpretation of an ambiguous or doubtful statute that has been acted upon by officials charged with its administration will not be disturbed except for weighty reasons." *Brewster v. Gage*, 280 U.S. 327, 336 (1930). Although this court has the duty under the Administrative Procedure Act, 5 U.S.C. § 706 (1976), to "decide all relevant questions of law," we recognize that the special expertise of EPA in interpreting the legislation which it is called upon to administer requires that we defer to the judgment of the Agency where that judgment is reasonable

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[112] JA III:1264.

and is consistent with the language and purpose of the legislation. *See generally Wilderness Society v. Morton*, 479 F.2d 842, 864-870 (D.C. Cir.) (*en banc*), *cert. denied*, 411 U.S. 917 (1973).

B. *The Statute*

Chrysler argues that the language of Section 207 (c) (1), the recall provision, is clear on its face, and that this court should reject the Administrator's interpretation even without resort to interpretive aids such as legislative history.[113] We cannot agree. Section 207 (c) (1), 42 U.S.C. § 7541(c) (1) (Supp. II 1978), reads in relevant part:

> If the Administrator determines that a substantial number of any class or category of vehicles or engines, although properly maintained and used, do not conform to the [emission standards], when in actual use throughout their useful life * * * he shall require the manufacturer to submit a plan for remedying the nonconformity * * *. * * *

Chrysler argues—and the ALJ agreed [114]—that the phrase "properly maintained and used" must be interpreted in accordance with Section 207(b) (2) (A), 42 U.S.C. § 7541 (b) (2) (A) (Supp. II 1978), the warranty provision of the Act.[115] That provision requires the manufacturer to

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[113] Brief of petitioner at 19-22.

[114] JA III:1099-1100. *But see* note 119 *infra*.

[115] Section 207(b) (2), 42 U.S.C. § 7541(b) (2) (Supp. II 1978), provides in relevant part:

> [The Administrator] shall prescribe regulations which shall require manufacturers to warrant the emission control device or system of each new motor vehicle or new motor vehicle engine * * *. The warranty under such regulations shall run to the ultimate purchaser and each subsequent purchaser and shall provide that if—

repair or replace the emission control systems of its vehicles under certain conditions. One of those conditions is that the vehicles must have been "maintained and operated in accordance with instructions under subsection (c)(3) of this section." *Id.* Subsection (c)(3) requires manufacturers to furnish vehicle purchasers with "written instructions for the proper maintenance and use of the vehicle" in accordance with EPA regulations. 42 U.S.C. § 7541(c)(3)(A) (Supp. II 1978).[116] Thus Chrysler concludes that "proper maintenance" for the purpose of a recall action under Section 207(c)(1) must be defined as maintenance strictly in accordance with the written instructions provided to vehicle purchasers as required by Section 207(c)(3).

We agree that Chrysler has propounded one plausible interpretation of the Act, but we cannot agree that no other interpretation is possible. First, Chrysler's interpretation does not account for the difference in language between Section 207(c)(1), which limits a recall to classes of vehicles that had been "properly maintained and used," and Section 207(b)(2)(A), which limits warranty claims to vehicles that had been "maintained and operated in accordance with [the manufacturer's written] instructions[.]" "Properly" in this context *may*

> (A) the vehicle or engine is maintained and operated in accordance with instructions under subsection (c)(3) of this section,
>
> (B) it fails to conform at any time during its useful life * * * to the [federal emission standards], and
>
> (C) such nonconformity results in the ultimate purchaser having to bear any penalty or other sanction * * *,
>
> then such manufacturer shall remedy such nonconformity under such warranty with the cost thereof to be borne by the manufacturer. * * *

[116] For the text of § 207(c)(3)(A), *see* note 4 *supra*.

mean the same thing as "in accordance with [the manufacturer's written] instructions," as Chrysler says. On the other hand, the difference in language may indicate a subtle difference in meaning. In a warranty action the individual vehicle owner seeks to shift his cost of repairing the emission control system to the manufacturer; he has every incentive to produce documentation to prove that he had maintained his vehicle in accordance with the manufacturer's instructions. In a recall action, however, the Administrator seeks to require a remedy for an entire class of vehicles; he may not be able to obtain precise documentation of the maintenance that was performed.[117] His emphasis must be on systemic, class-wide defects in the design or construction of the emission controls, rather than on individual breaches of the warranty.[118] Such systemic defects may be revealed in vehicles deviating somewhat from the precise specifications of the manufacturer. It is possible, therefore, that Congress intended the "properly maintained" requirement of Section 207(c)(1) to be more flexibly interpreted than the "maintained and operated in accordance with [the manufacturer's written] instructions" requirement of Section 207(b)(2)(A).[119]

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[117] *See* JA III:1101 (Initial Decision).

[118] *See* 1 UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, GENERAL COUNSEL OPINIONS, AIR POLLUTION 105, 111-112 (1979).

[119] Chrysler seems to misunderstand the Administrator's Decision and Order on this point; it says in its reply brief that the Administrator agreed with the ALJ that the maintenance clauses of subsections (b)(2)(A) and (c)(1) have the same meaning. Reply brief of petitioner at 7-8. However, the pages of the Decision and Order cited by Chrysler on this point, JA III:1207-1208, merely *summarized* the interpretation suggested by the parties and the ALJ. Several pages later the Administrator plainly *rejected* the interpretations offered by the ALJ and the parties, saying that they

Second, Chrysler's proposed interpretation fails to give full effect to the phrase "when in actual use" in Section 207(c)(1). This language might be taken to indicate that Congress was concerned with everyday conditions, not with an ideal world in which the technical instructions of the manufacturer are obeyed to the letter. If—as the Administrator found—the design of Chrysler's emission control system and maintenance procedures encouraged or fostered improper maintenance by ordinary owners and mechanics, we cannot say that Section 207(b)(2)(A) or any other section of the Act would preclude the Administrator from requiring a recall.

We therefore must look to the legislative history of the Act and to the function and purpose of the "properly maintained" language in the statutory scheme to see whether the Administrator's interpretation can be sustained.

C. *Legislative History*

Prior to the Clean Air Amendments of 1970, Pub. L. No. 91-604, 84 STAT. 1676, there was no system of in-use

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"place undue emphasis on the text of the words 'properly maintained' without examining the purpose or function of the 'properly maintained' criterion in the overall statutory scheme." JA III:1211-1212.

Although the Administrator never thereafter discussed the relationship between subsections (b)(2)(A) and (c)(1), he obviously rejected the theory that they are *in pari materia*, since he did not hold that maintenance in accordance with Chrysler's specifications is the only "proper" maintenance for purposes of § 207(c)(1). This is not to say, of course, that the Administrator found "proper maintenance" to have no relation to obedience to the manufacturer's instructions. Rather, "proper maintenance" for purposes of § 207(c)(1) is maintenance in accordance with the manufacturer's instructions, taking into account the effect of design defects and other factors caused by the manufacturer that affect the true state of maintenance in actual use. JA III:1244.

testing of vehicles. Thus Section 207 represented "a significant departure from prior provisions for control of vehicle emissions." S. Rep. No. 1196, 91st Cong., 2d Sess. 29 (1970), *reprinted in* LIBRARY OF CONGRESS CONGRESSIONAL RESEARCH SERVICE, ENVIRONMENTAL POLICY DIVISION, 93D CONG., 2D SESS., 1 A LEGISLATIVE HISTORY OF THE CLEAN AIR AMENDMENTS OF 1970 at 429 (Committee Print 1974) (hereinafter cited as *Leg. Hist.*). Under the earlier scheme compliance with national emission standards was judged by tests of prototype models and samples of production-line vehicles.[120] If a class of vehicles satisfied this test, then emission standards were presumed met. As data became available on the performance of these certified vehicles in actual use, however, federal officials found that emission control performance seriously deteriorated after sale. A study by the National Air Pollution Control Administration concluded that more than half of the previously-certified vehicles in actual use in the spring of 1968 failed to satisfy either the hydrocarbon or the carbon monoxide standard. One model registered an 80 percent failure rate.[121]

Faced with this problem, Congress resolved to require manufacturers to construct vehicles that would satisfy performance tests as well as design and production tests. Senator Muskie, principal spokesman for the bill, said, "So what we are concerned about is not only the tests or the standards that the cars meet while they are in the

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[120] S. Rep. No. 1196, 91st Cong., 2d Sess. 29, *reprinted in* LIBRARY OF CONGRESS CONGRESSIONAL RESEARCH SERVICE, ENVIRONMENTAL POLICY DIVISION, 93D CONG., 2D SESS., 1 A LEGISLATIVE HISTORY OF THE CLEAN AIR AMENDMENTS OF 1970 at 429 (Comm. Print 1974) (hereinafter cited as *Leg. Hist.*).

[121] Air Pollution—1970: Hearings on S. 3229, 3466, 3546 Before the Subcommittee on Air and Water Pollution of the Senate Committee on Public Works, 91st Cong., 2d Sess. 1072 (1970), *reprinted in Leg. Hist.* at 1072.

factory, but also whether or not they continue to meet these standards afterward." 116 CONG. REC. 33093 (1970), *reprinted at Leg. Hist.* 330. As we have already noted,[122] the performance requirements were to be enforced in two ways: through warranty provisions and recall actions. Congress recognized, however, that some responsibility for deterioration of emission control equipment in actual use must be borne by the vehicle owners, whose negligence or abuse in maintenance and operation can frustrate or disable the emission controls. Thus the warranty and recall provisions of the Act included a requirement that owners maintain and operate their vehicles properly. As Senator Muskie explained:

> We understand that it is not presently possible to build a maintenance-proof, clean car, but that it is possible—with the use of a system that is built with some durability in it and some reponsibility imposed upon the operator—to assure reasonably clean operation of such an automobile. We have to have the two. One without the other is like a one-legged man.

Id. at 33094-33095, *Leg. Hist.* at 332. To promote better maintenance Congress required manufacturers to provide vehicle purchasers with written instructions on proper maintenance. These instructions should be "reasonable and uncomplicated," S. Rep. 1196, *supra*, at 30, *Leg. Hist.* at 430, so that they can be understood and followed by vehicle owners. In order to take advantage of the warranty protection owners must do their part to keep the emission system in good working order. Both the explicit language of the statute[123] and the legislative history[124] make clear that owners facing sanctions for

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[122] *See* Part I *supra*.

[123] Section 207(b)(2)(A), 42 U.S.C. § 7541(b)(2)(A) (Supp. II 1978). *See* note 115 *supra*.

[124] Senator Muskie said that "unless the individual operator meets the manufacturer's instructions with respect to

emission control failures cannot shift the expense of remedying the nonconformity to the manufacturer unless they can prove that they maintained the system in accordance with the written instructions of the manufacturer.

Chrysler contends that this clear language and legislative history with respect to the warranty provisions must apply with equal force to the recall provisions. However, the legislative history does not support this view. Rather, that history indicates that Congress realized that vehicle owners are often unable to find mechanics to service their vehicles competently, and that Congress therefore placed the burden on the auto manufacturers to design an emission control system that would effectively reduce auto emissions despite the poor performance of the maintenance industry. This is evident from a colloquy between Senators Allott and Muskie.

Senator Allott complained that poor maintenance facilities represented a "weak spot" in the bill. He said that "to secure competent maintenance on a car at the present time in any respect is almost an impossibility." 116 CONG. REC. 33095, *Leg. Hist.* 332-333. Senator Muskie agreed with Senator Allott that the "greatest problem the industry faces is the shortage of mechanics across this country," but stated that "[w]e cannot by legislation remake the automobile industry." *Id.*, *Leg. Hist.* 334. He attributed the maintenance problems to the manufacturers' insistence on using the internal combustion engine and said, "We cannot solve the problem of whatever technology the industry chooses to put its bets on. All we can do is set the standards. The automobile industry has created all of the problems from the top to the bottom." *Id.*, *Leg. Hist.* 335. He concluded:

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maintaining the car as it relates to the clean air provisions of the automobile, the warranty will not be available to the owner." 116 CONG. REC. 33094 (1970), *Leg. Hist.* at 332.

> So, if the bill is weak in not providing for the solution of the maintenance problem, I would welcome an amendment that would cure that weakness. But I do not think there is any way of writing a law that will create maintenance capability all across the country. Only the automobile industry can do that.

Id. at 33096, *Leg. Hist.* at 335.

If Congress thus believed that "only the automobile industry" could solve the maintenance problem, it was logical to pass an Act placing primary responsibility on the design capability of the manufacturers rather than on the maintenance capability of mechanics and owners. Thus, despite Senator Allott's objections, Section 207 was left unchanged. The primary responsibility for emission control was left with the manufacturers; they were expected to solve the maintenance problem by designing a system that would be less susceptible to faulty maintenance. Admittedly, Congress did not intend liability to rest on the manufacturer if the condition of poor maintenance could be attributed to owners or mechanics. If, however, design defects of the manufacturer proved to be responsible for the condition of poor maintenance, the legislative history would indicate that Congress did indeed intend responsibility for remedy to rest on the manufacturers.

D. *Function of the "Properly Maintained" Criterion in Achieving the Purposes of the Act*

We cannot interpret Section 207 "in a manner which runs counter to the broad goals which Congress intended it to effectuate." *See FTC v. Fred Meyer, Inc.*, 390 U.S. 341, 349 (1968). The Administrator warned that Chrysler's interpretation was in "evident disregard for the goals of the Clean Air Act." JA III:1213. The broad purpose of the Clean Air Amendments of 1970 is plain: "to protect and enhance the quality of the Nation's air

resources so as to promote the public health and welfare and the productive capacity of its population[.]" Section 101(b)(1) of the Act, 42 U.S.C. § 7401(b)(1) (Supp. II 1978). The purpose of the recall provisions seems equally plain: to give auto manufacturers an incentive to design and construct their emission control systems to meet standards in actual use for the estimated life of the vehicle. The theory underlying the provisions is that the manufacturers are better equipped than Congress or EPA to design a system that would meet federal emission standards. By setting standards, and leaving the auto manufacturers free to design and construct vehicles that would satisfy them, EPA can harness the forces of American industrial ingenuity to solving the serious national problem of vehicle-produced air pollution.

From this perspective, it would make little sense to impose liability on the manufacturers for conditions of nonconformity caused by the actions of vehicle owners or mechanics. Unless the cause of the nonconformity is within the manufacturer's control, an imposition of liability would be an unwarranted financial burden on the manufacturers, unrelated to the strategy of forcing technological progress. Thus the "properly maintained and used" criterion in Section 207(c)(1) is best understood as an acknowledgement of the limited ability of manufacturers to prevent those nonconformities primarily caused by intentional or negligent faulty maintenance by owners and mechanics.

Chrysler's contention—that manufacturers have no responsibility for nonconformities if the owners failed to attain maintenance in accordance with the manufacturer's precise written specifications—would far exceed the purpose of the "properly maintained" criterion and would undermine the broad objectives of the Act. Such an interpretation would strip the manufacturers of a large part of the incentive to design emission systems

that would operate effectively while in actual use. The manufacturer could prescribe maintenance that is difficult to perform or incompatible with smooth operation of the vehicle, but bear no responsibility for the natural consequence of such design—so long as the vehicles passed the initial certification tests. We could expect little or no progress in development of better, more maintenance-free emission controls.

The Administrator's construction—making the manufacturer responsible for nonconformities primarily attributable to design defects knowingly produced by the manufacturer—would better serve to promote the purposes of the Act. At the same time it would retain protection for those manufacturers striving, within the limits of technology, to produce effective emission controls. We agree with the Administrator that if a manufacturer knowingly used an emission control system resulting in large numbers of misadjustments, instead of a less sensitive and more durable system available to it, it should be held responsible under the Act for the consequences and be subject to a recall.

We reject Chrysler's suggestion that the responsibility of the manufacturer must be judged by maintenance performed in a laboratory setting, rather than by that typical of a mechanic's shop or a dealership. It does the public little good to pay higher costs for cleaner automobiles, only to find that they fail emission standards except when specially adjusted by trained mechanics operating under laboratory conditions. If design defects make "proper maintenance" so difficult that even Chrysler dealers do not perform it, then such "proper maintenance" is beyond the reach of the average car owner. Use of a laboratory-pure standard of "proper maintenance" is contrary to the "actual use" standard of the Act.

Although we admit that the language of Section 207 (c) (1) is open to more than one interpretation, we con-

clude that the legislative history and the purpose of the "properly maintained" criterion require that we affirm the interpretation adopted by the Administrator.

E. *Retroactive Rulemaking*

Chrysler charges that the Administrator's interpretation of the statute is tantamount to retroactive rulemaking.[125] It points out that the Administrator promulgated new regulations on January 12, 1979, requiring prototype and production-line vehicles starting with the 1981 model year to pass federal emission standards no matter how their engines are adjusted within the physically adjustable range. The vehicles thus must satisfy federal standards even when misadjusted. *See* Control of Air Pollution From New Motor Vehicles and New Motor Vehicle Engines: Certification and Test Procedures, 44 FED. REG. 2960 *et seq.* (1979).[126] Chrysler claims that the order under review applies this new requirement—prospectively announced for model years starting with 1981—to Chrysler's 1975 model year vehicles. It claims that no one in 1975 knew that a manufacturer could be held responsible for misadjustments, and that this additional responsibility could lawfully be imposed only by a prospective rulemaking, like that of January 12, 1979, and not by a retrospective adjudication.

We cannot agree with this argument. The recall order recognizes no duty of Chrysler other than that imposed by the Act: to design and construct vehicles that would satisfy emission standards in actual use, when properly maintained, for five years or 50,000 miles. Chrysler was aware of this statutory duty, and of the consequences

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[125] *See* brief of petitioner at 37-41.

[126] The new rules were proposed on October 21, 1977, about 10 months after the Administrator initially notified Chrysler of the nonconformities in the recall class. 42 FED. REG. 56298 *et seq.* (1977).

that would attach in the event of its failure to comply. According to the order under review, Chrysler chose to employ cheaper and less effective emission control equipment, in the face of evidence that misadjustments serious enough to cause widespread nonconformities were likely. Chrysler thus took a gamble that the idle adjustment method of providing sufficient oxygen to the catalytic converter would work, or that EPA would be unable to prove its case for a recall. The statute demands that Chrysler bear the consequences of its decision.

In any event, the new regulations are quite different from the statutory duty enforced against Chrysler in this case. Under the new regulations manufacturers must take active steps to prevent idle misadjustments by owners and mechanics. But under the Decision and Order Chrysler was merely required to design an emission control system that would not *instigate* such misadjustments. According to the Administrator, the misadjustments now attributed to Chrysler were primarily caused by Chrysler's choice of design; the misadjustments to be prevented by the new regulations are those caused by owners and mechanics as well. Thus, Chrysler cannot logically claim that its 1975 vehicles are being judged by 1981 standards. Nor may Chrysler argue that the existence of new regulations governing the 1981 model year should relieve it of the consequences of violating the regulations in effect for the 1975 model year.

V. Substantial Evidence Issues

Chrysler also challenges the adequacy of the factual basis for the Administrator's conclusions. On this issue we apply the familiar "substantial evidence" test. 5 U.S.C. § 706(2)(E) (1976). "Substantial evidence," as Chief Justice Hughes said, is "more than a mere scintilla. It means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *Consolidated*

Edison Co. v. NLRB, 305 U.S. 197, 229 (1938). This court may not displace the Administrator's "choice between two fairly conflicting views," even if we "would justifiably have made a different choice had the matter been before [us] *de novo*." *Universal Camera Corp. v. NLRB*, 340 U.S. 474, 488 (1951).

The administrative record in this case is voluminous. It contains Chrysler and EPA documents, statements and depositions of EPA and Chrysler officials and experts, results of tests of Chrysler vehicles, and other materials. The evidence at hand is conflicting and contradictory on many points. Nevertheless, after examining with care those portions of the administrative record cited by the parties to support their factual arguments, we conclude that substantial evidence was presented that:

> (1) Substantial numbers of recall class vehicles failed to satisfy federal carbon monoxide emission standards when in actual use;
>
> (2) the principal cause of the nonconformities was misadjustment of the idle mixture;
>
> (3) the idle misadjustments were caused, fostered, or encouraged by design defects in the Chrysler system; and
>
> (4) the nonconformities were, or should have been, foreseen by Chrysler.

We have already described the characteristics of the recall class emission system design and maintenance procedures and the results of the Chrysler, state, and EPA tests that underlie the Administrator's conclusions.[127] We need not repeat that discussion here. Here we shall simply identify the major factual disputes, refer to the more important evidence concerning them, and address Chrysler's specific attacks on the sufficiency of that evidence.

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[127] *See* Part II *supra*.

A. *Substantial Numbers of Recall Class Vehicles Failed to Satisfy Federal Carbon Monoxide Emission Standards When in Actual Use*

Evidence in the record overwhelmingly shows that a large majority of the recall class vehicles in actual use failed the carbon monoxide emission tests, and badly. The Emission Factor Program found that 85 percent of the tested vehicles in the recall class exceeded the emission standards, with an average carbon monoxide emission level of over 48 grams per mile—more than three times the permissible level.[128] The Olson Program found 90 percent of its tested vehicles to exceed the standard, with an average emission level two to four times that permitted by the regulations.[129] All other relevant data in the record corroborate this conclusion. Indeed, Chrysler apparently does not seriously dispute that a substantial number of vehicles in the recall class in actual use emit more carbon monoxide than federal regulations permit.[130]

Chrysler does, however, criticize the testing program used to generate the evidence in the record. First, Chrysler points out that the Olson test data, considered alone without the Emission Factor Program results, establish that only 49 percent of the 400 CID vehicles in the recall class can be predicted with 95 percent accuracy to be in violation of the standards.[131] This does not, how-

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[128] JA III:1175 (Initial Decision, Findings of Fact Nos. 22-23).

[129] *See* table at note 71 *supra*.

[130] Chrysler's argument that misadjustment of emission control systems is "an industry-wide problem, not limited to Chrysler vehicles," brief of petitioner at 9, in effect admits that many of the recall class vehicles are in violation of the emission standards.

[131] Brief of petitioner at 88; *see* JA III:1241 (Decision and Order).

ever, convince us to reject the Administrator's findings. This selective use of part of one study barely brings the proportion of nonconforming vehicles below half. And taking into consideration the results of the Emission Factor Program as well as the Olson Program, the percentage of 400 CID vehicles in violation rises to 79 percent.[132] The evidence taken as a whole shows that by any standard a "substantial number" of the vehicles were in nonconformity.[133]

Chrysler also argues that the Administrator should have considered only the after-maintenance portion of the Olson Program when he decided whether a "substantial number" of vehicles in the recall class were in nonconformity.[134] Chrysler points out that "[e]stimated CO failure rates for the 360's and the 400's based on Olson data, are 3.7% and 8.3% respectively," after maintenance in precise accordance with Chrysler's specifications is performed. Brief of petitioner at 90. This argument, however, relies on Chrysler's legal theory—rejected by the Administrator and this court—that the manufacturer is not accountable for nonconformities caused by misadjustment. For purposes of this recall action, we agree with the Administrator that the relevant data are those concerning recall class vehicles in actual use, not those subjected to elaborate maintenance.

Finally, Chrysler argues that the Olson test sample was not representative of recall class vehicles nationwide,

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[132] JA III:1241 (Decision and Order).

[133] We see no reason why a "substantial number" in this context must necessarily mean more than half. On this record we need not decide precisely where the dividing line is, but we agree with the Administrator that a "substantial number" of nonconforming vehicles is any number large enough to show that a "systematic or pervasive problem in a particular class or category of vehicles" exists. *See* JA III:1251.

[134] Brief of petitioner at 90.

for three reasons. First, all vehicles in the Olson test were from a single metropolitan area, Wayne County, Michigan. Second, many vehicle owners refused to participate in the tests. Third, sample size was small—only 20 vehicles.[135] The Administrator acknowledged these defects in the test sample, but stated: "The small errors pointed to by Chrysler are really nothing more than minor deviations from the type of perfection one might expect in a textbook on sampling procedures, but not in the real world." JA III:1234.[136] Without disparaging Chrysler's legitimate concern for the niceties of sampling technique, we conclude that the evidence is so unambiguous, and so amply supported by other tests conducted under a variety of conditions in many states, that the Administrator was justified in concluding "that the Olson and Emission Factor results are representative of the entire class of recall vehicles." JA III:1246.[137]

Chrysler lodges several similar complaints about the procedures used in the Emission Factor Program. However, it says:

> The Emissions Factors Program was no doubt valid for the purpose for which it was designed and conducted, namely, measuring emissions of vehicles in whatever condition of use and maintenance they

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[135] Brief of petitioner at 91-94, 96.

[136] *See* note 87 *supra*.

[137] Chrysler also says that vehicles with removed or damaged "limiter caps" should not have been included in the test. Brief of petitioner at 95. However, since the faulty design of the "limiter caps" was found to be one cause of the nonconformities, the inclusion of such vehicles was entirely appropriate. We also see no reversible error in the use of EPA employees to conduct telephone interviews of test participants. *See id.* Other than an appearance of some slight impropriety, Chrysler has not shown that any bias might have resulted from this practice.

> happen to be. The data is however totally invalid for recall purposes which requires results only from properly maintained vehicles.

Brief of petitioner at 98. This objection to the Emission Factor Program is without merit. Nowhere in the Act or in the regulations appears any requirement that vehicles tested for in-use nonconformities must be prescreened to eliminate those improperly maintained. The Emission Factor Program confirms the results of the Olson Program: that large numbers of recall class vehicles in actual use emit more carbon monoxide than the regulations permit. Admittedly, the Emission Factor Program provides little evidence of *why* the vehicles fail to conform, but it was not used for that purpose. For the use to which it was put by the Administrator, the Emission Factor Program was probative.[138]

B. *The Principal Cause of the Nonconformities Was Misadjustment of the Idle Mixture*

The record leaves little doubt that the cause of the widespread nonconformities in the recall class was that their carburetor idle mixtures were not set to sufficiently "lean" fuel-to-air ratios. The Olson Program showed that the large majority of vehicles in the class could be brought into conformity by precise adjustment of the

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[138] Chrysler also argues that the Administrator improperly considered evidence based on the "short" test rather than the "Federal" test procedure. Reply brief for petitioner at 34-37. We find no error on this point. We agree with the Administrator that most evidence in the record indicates that vehicles with a 1.5% to 2.0% carbon monoxide concentration in the exhaust, as measured by the "short" test, generally fail the "Federal" test as well. JA III:1249. Moreover, the Administrator primarily relied on the Olson and Emission Factor Programs, which used the "Federal" test procedure. The "short" test results were merely used for corroborative purposes. JA III:1249.

idle in accordance with Chrysler's specifications.[139] Chrysler agrees with this factual conclusion, quoting in its brief the Administrator's conclusion that

> the record in this proceeding conclusively establishes that the cause of excessive carbon monoxide emissions in the Chrysler recall class vehicles is attributable to misadjustments of the carburetor idle mixture adjustment and that such misadjustments were performed in a manner *inconsistent with or contrary to the manufacturer's written specifications.* [J.A. III:1206-07 (emphasis added).]

Brief of petitioner at 15.

C. *The Idle Mixture Misadjustments Were Caused, Fostered, or Encouraged by Design Defects in the Chrysler System*

We need not repeat our lengthy description of the Chrysler emission control system: its reliance on nice adjustments of the idle mixture screws rather than installation of $50 air pumps, its sensitive adjustment screws, its inadequate limiting system, its reliance on equipment that frequently is unavailable or out of order, its cumbersome procedure. Nor need we describe again the baneful effects of so "lean" an air-fuel ratio on the driveability of the automobiles. Chrysler has placed the mechanic in a serious dilemma. The mechanic is put to a choice between adjusting the idle setting for pollution control purposes and satisfying the customer. Generally, though not always, these prove to be conflicting goals. We find the record especially revealing with respect to Chrysler dealership mechanics. When surveyed a large majority of such mechanics stated that it is not usually possible to achieve "acceptable engine smoothness and driveability" when the idle mixture is

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[139] *See* text and notes at notes 18, 65-71 *supra.*

set to Chrysler's specifications. They said that proper adjustment generates customer complaints of rough idle, hesitation, and other forms of poor performance.[140] This evidence strongly indicates that Chrysler failed to design and construct a vehicle that could meet emission standards in everyday circumstances and still satisfy the legitimate demands of its customers for cars that run smoothly and well.[141] We find that there was substantial evidence in the record to support the Administrator's conclusion that misadjustments "were encouraged or fostered by the design of Chrysler's emission control system and its carburetor adjustment procedures," JA III:1207, and that "the service industry's contribution is the inevitable byproduct of Chrysler's emission system design and service procedures." JA III:1215.

Chrysler argues:

> The "defects" to which the Administrator points are not defects at all, but are at most alternative designs. All of the evidence admitted below shows that the design of the carburetor and emission control system on the recall vehicles was within the state-of-the-art at the time these vehicles were designed and manufactured and will meet the emissions standards when properly maintained. There is no substantial evi-

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[140] JA V:1977-1978.

[141] Chrysler objects to the Administrator's reliance on evidence of "driveability" problems in the recall class. Brief of petitioner at 49-54. It argues that, in the absence of "an official definition or test for driveability," *id.* at 49, such reliance violated the requirement of § 207(c)(1) that a recall be based on objective standards. We reject this reasoning. EPA employed "objective standards" for determining that a "substantial number" of vehicles in the recall class were in violation of the emission standards. It used the concept of "driveability" solely to show a causal connection between the observed misadjustments and the defects in the design of Chrysler's emission controls.

> dence in the record to the contrary and none which shows that this design and the associated maintenance procedures were in any way "defective."

Brief of petitioner at 11. Many a Chrysler witness testified that Chrysler's system was within the "state of the art."[142] On this issue of automotive engineering judgment, however, we must defer to the technical expertise of the Administrator. And it is impossible to say that his contrary conclusion was without substantial support in the record, given his extensive analysis of each of the deficiencies in the design of the Chrysler system. Moreover, we find it suggestive that Chrysler's recall class vehicles, supposedly within the "state of the art," performed so poorly in comparison with their competitors. Data underlying the Motor Vehicle Tampering Survey[143]—added to the record after the close of the proceeding at Chrysler's insistence—indicated that the average carbon monoxide concentration in the emission of 1975 Chrysler vehicles was 3.87 percent, as contrasted to an average of 1.72 percent for General Motors and 0.88 percent for Ford.[144]

When Chrysler states that the recall class vehicles "will meet the emissions standards when properly maintained," brief of petitioner at 11, it apparently means that they will do so if adjusted by experts under laboratory conditions precisely in accordance with Chrysler's specifications. There is no evidence in the record that ordinary mechanics performing ordinary maintenance often succeed in adjusting the recall class vehicles to Chrysler's specifications while achieving satisfactory drive-

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[142] *E.g.*, JA I:29-36 (Cook testimony); JA I:37-40 (Sherwin testimony); JA II:635-638, 656-657 (Heinen testimony).

[143] *Reprinted at* JA IV:1575-1684.

[144] JA III:1264 (Denial of Motion for Reconsideration).

ability.[145] As the Administrator said, the maintenance actually available to owners of recall class vehicles is "totally unlike" the precise maintenance to which Chrysler refers.

D. *The Nonconformities Were, or Should Have Been, Foreseen by Chrysler*

Evidence in the record indicates that automotive engineers in the late 1960's and early 1970's—including Chrysler engineers—recognized the problem of idle misadjustments in the field and its relation to excessive carbon monoxide emissions. EPA placed some 14 reports, speeches, and articles written between August 1966 and February 1974 in the record to show that the problem was generally understood in the industry.[146] In May 1973 Chrysler itself cited several surveys showing widespread misadjustment of the idle mixture of vehicles in the field, in a petition for suspension of the 1976 emission standards.[147] That petition indicates that Chrysler understood the problem and was aware that a solution would be necessary in order to meet federal emission standards.

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[145] Chrysler points to the testimony of an EPA investigator, Mr. Gockel, to prove that the average mechanic is capable of performing Chrysler's adjustment procedures. Reply brief of petitioner at 28. Mr. Gockel had said, "A high percentage of the mechanics had adequate knowledge, skills and equipment to perform carburetor adjustments according to manufacturer's procedures and specifications if they were motivated to do so." JA V:1972. The problem identified by EPA is not mechanics' lack of skill or training, but rather the Chrysler design, which induces mechanics to save time and solve driveability problems at the expense of pollution control.

[146] EPA Exhibits 28-44, *see* JA I:236-237 (Dietrick testimony).

[147] EPA Exhibit 42, *see* JA I:383-384 (Gockel testimony).

In late 1973 Chrysler undertook a field study of the emission control system to be used in the recall class. It equipped a fleet of about 100 1974 vehicles with the emission control equipment planned for the 1975 model year. Half of these vehicles contained air pumps; half relied on idle mixture adjustments. The test showed that vehicles equipped with air pumps were able to conform to federal and California emission standards, but that widespread misadjustments of the idle mixture in the remaining vehicles caused emissions in excess of the standards.[148] In an intra-company memorandum Mr. J. E. Stoyack of the emission development testing division of Chrysler stated that "[t]he effect of idle CO level on 1975 emission levels was not detectable on California vehicles [those equipped with air pumps]"; he also stated that "1975 emission levels on Federal vehicles [those relying on idle adjustments] were significantly affected by changes in idle CO level." JA V:2005. In conclusion Mr. Stoyack said:

> Without an air pump, oxygen for catalytic oxidation in the Federal system is limited and increased idle and off-idle richness readily produces higher emissions due to the decrease in available oxygen.

JA V:2007. There was also expert testimony in the record that Chrysler foresaw, or should have foreseen, the misadjustment problems of the recall class, but failed to take availabe steps to solve them.[149] For example, EPA witness Mr. Gockel stated:

> I have studied information and "state-of-the-art" technology available to Chrysler and the auto industry at the time the recall class vehicles were being designed and it is my opinion that Chrysler did foresee that the subject vehicles would be misad-

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[148] JA I:238-240 (Dietrick testimony).

[149] *See, e.g.*, JA I:233-235 (Dietrick testimony); JA I:432-433 (DeKany testimony).

> justed. It is also my opinion that they should have foreseen that this misadjustment would cause widespread nonconformity with the Federal emission standards in actual use and that they had knowledge of available technology needed to prevent this problem.

JA I:383.

On this record the Administrator concluded:

> * * * The evidence presented by EPA in the form of expert opinion and other proof convinces me that Chrysler should have foreseen the possibility of widespread misadjustments occurring in the recall class vehicles due to the combined effects of the various factors described above and further that such misadjustments would result in a substantial number of the recall class vehicles exceeding the Federal emission standard for carbon monoxide. * * *

JA III:1233.

In response Chrysler rightly points to expert opinion given by Chrysler witnesses indicating that the company did not foresee the problem of widespread idle misadjustments,[150] and to testimony of one EPA engineer involved in certifying the recall class that he was not aware of the problem at that time.[151] However, Chrysler fails to come to grips with the totality of the design defects that made precise adjustment so difficult and unlikely, or to explain how the manufacturer could reasonably have thought, on the basis of evidence then available, that the recall class vehicles would continue to pass federal emission standards when in actual use, away from the tender care of Chrysler laboratory engineers. Moreover, there can be no doubt that Chrysler was aware that installation of air pumps would improve the performance of the

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[150] *See, e.g.*, JA I:11 (Heinen testimony).

[151] *See* JA I:162 (Kohnken testimony).

emission control system, since it installed air pumps in vehicles sold in California, which had stricter emission standards.[152] The Administrator carefully considered the evidence presented on Chrysler's behalf and found it unconvincing.[153] We believe that substantial evidence supports his conclusion.

Chrysler also argues that EPA may not now require correction of design defects, since such defects were not identified by EPA inspectors during the pre-sale certification testing. Chrysler submitted its carburetor design and maintenance procedures to EPA for testing and EPA approved them.[154] Chrysler reasons that EPA may

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[152] *See* text at notes 7-11 *supra*.

[153] JA III:1234-1239.

[154] *See* JA IV:1503 (Chrysler's preliminary application for model year 1975 certification); JA IV:1516-1517 (certificate of conformity); JA I:23-25 (Robertson testimony). In its brief EPA argues strenuously that the Agency "does not review and approve the service procedures as to reasonableness for purposes of certification." Brief of respondents at 74. So far as we have been able to determine, this assertion is not accurate. The regulation in effect at the time of the certification of the recall class provided, in relevant part:

> The manufacturer shall provide to the Administrator * * * a copy of the maintenance instructions which the manufacturer proposes to supply to the ultimate purchaser * * *. The Administrator will review such instructions to determine whether they are reasonable and necessary to assure the proper functioning of the vehicle's emission control system. * * *

40 C.F.R. § 85.075-39(a) (1976). These written instructions include the owner's manual maintenance schedule and the underhood label explaining the idle adjustment procedure, according to the Administrator. JA III:1210. The only support EPA offers for its assertion is a citation to the testimony of Mr. Kohnken, who was the leader of the certification team that tested the recall class. But Mr. Kohnken stated that his team performed the maintenance prescribed by Chrys-

not now require it to recall the vehicles to correct subsequently discovered defects.[155] We cannot agree with this argument. Admittedly, EPA failed to recognize the defects that have proven to plague the design of the emission controls of the recall class, with the unfortunate result that the vehicles, instead of being corrected at the time, have been foisted upon the environment in violation of the emission standards. This does not mean, however, that EPA is powerless to correct its mistake, or to require Chrysler to correct its violation. The entire purpose of the in-use testing program is to identify classes of vehicles that—despite inspection for emission control and durability at the time of certification—fail to conform to emission standards when in actual use. When such nonconformity is discovered, and when its cause is traced to a defect in design, material, or workmanship, then the recall remedy is required. Original certification

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ler and determined that it was "reasonable." JA I:147-149, 156-157.

> Q Is the idle set procedure one of the procedures which is called for in the part one of the application?
>
> A Yes.
>
> Q Is that something else though which would be reviewed by your people in analyzing the part one?
>
> A Yes.
>
> Q Is the same standard used there as you mentioned earlier in reviewing the shop manuals, that this was reasonable engineering judgment as to what you would say is proper or improper?
>
> A Yes, I would imagine so, yes.

JA I:150 (Kohnken deposition). Mr. Kohnken also supplied an example of an instance in which EPA denied certification because the maintenance procedures were unreasonable. JA I:151-152. *See also* JA I:21-28 (Robertson testimony).

[155] Reply brief of petitioner at 13-16.

does not relieve the manufacturer of its obligations under the Act.[156]

VI. Conclusion

In sum, we agree with the Administrator's interpretation of Section 207(c)(1) of the Clean Air Act, 42 U.S.C. § 7541(c)(1) (Supp. II 1978), that a manufacturer may be held responsible in a recall action for nonconformities resulting from misadjustments, if such misadjustments were principally caused by the design of the emission control system and maintenance procedures, and if the manufacturer foresaw or should have foreseen the problem and failed to take available steps to obviate it. We find substantial evidence in the record to support the Administrator's conclusion that Chrysler vehicles in the recall class fail to conform to federal carbon monoxide emission standards when in actual use, although properly maintained and used, and thus that Chrysler must submit a plan for remedying the nonconformity, in accordance with the Act. The Decision and Order is

Affirmed.

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[156] Chrysler also raises objections based on alleged evidentiary and discovery errors by the ALJ. *See* text at notes 79 and 107 *supra*. These objections were rejected by the Administrator, JA III:1258-1259, and we agree with his conclusion. Certain documents were withheld from Chrysler on the basis of the attorney-client privilege, work product doctrine, or executive privilege. The ALJ examined these documents *in camera* and verified that all relevant factual materials therein were disclosed to Chrysler in other form. In addition, Chrysler was denied the right to depose a certain EPA official, but was permitted instead to depose another official of equal familiarity with the subject. Although Chrysler raises these evidentiary rulings on appeal, it does not make a credible showing that it was prejudiced by them, and we decline to reverse on account of them. Nor do we find reversible legal error in the other evidentiary rulings of the ALJ.

APPENDIX B

BEFORE THE ADMINISTRATOR
U.S. ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

CAA (207) Docket No. 1

In the Matter of:

CHRYSLER CORPORATION
Respondent

DECISION AND ORDER

This appeal concerns the validity of an order issued by the Administrator of the U.S. Environmental Protection Agency (EPA) on December 8, 1976, directing Chrysler Corporation to "recall" all 1975 vehicles equipped with 360 and 400 cubic inch displacement (CID) engines having two barrel carburetors and catalytic converters. The recall order was issued pursuant to section 207(c)(1) of the Clean Air Act, as amended, and alleged that a substantial number of vehicles in the recall class exceeded the 1975 Federal standard for carbon monoxide (CO) emissions. EPA investigations indicated that the excessive emissions were primarily the result of carburetor idle misadjustments.

Chrysler, at its request, was granted an opportunity to contest the recall order in an adjudicatory hearing conducted pursuant to 40 C.F.R. 85.1807 (1977).[1] At the conclusion of the hearing, Administrative Law Judge Edward B. Finch issued his initial decision affirming the

[1] The hearing request was made by Chrysler in a letter dated January 19, 1977. A notice announcing the hearing was published in the Federal Register on February 8, 1977 (42 Fed. Reg. 7983).

recall order.[2] It is that decision which is the subject of the present appeal.

The principal source of controversy centers on the fact that the recall class vehicles must be "properly maintained" within the meaning of section 207(c)(1) in order for the automobile manufacturer to be held responsible for the emission nonconformity. The presiding officer found as a matter of law that "properly maintained" is a term of art in the automobile industry which means maintained in accordance with the manufacturer's instructions or specifications. Applying this definition, Chrysler contends that the idle mixture screws in the test vehicles were misadjusted contrary to the manufacturer's specifications, and hence, the vehicles were not "properly maintained." As discussed below, the record does establish that the test vehicles were in a condition of misadjustment, contrary to the idle mixture specifications of the manufacturer; however, at the same time, the record also establishes that Chrysler is responsible for the condition of misadjustment because of defects in the design of its emission system and service procedures.

A. *Statutory Framework*

General. The problem of automobile emissions first received Congressional attention in the 1950's, but it was not until enactment of the Clean Air Act of 1965 that Federal standards for automobile emissions were authorized.[3] Under that Act, emission standards were set by

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[2] Prehearing conferences were held on March 31, 1977, April 21, 1977, May 10, 1977, and July 15, 1977. The hearing commenced on September 19, 1977, and terminated with the close of evidence on November 10, 1977. The initial decision was issued on February 10, 1978.

[3] Clean Air Act (42 U.S.C. 7401 *et seq.*, formerly 42 U.S.C. 1857 *et seq.*) includes the Clean Air Act of 1963—P.L. 88-206, and amendments made by the Motor Vehicle Air Pollu-

the Department of Health, Education and Welfare, based on technological feasibility. Congress amended the Clean Air Act in 1970 and eliminated administratively established emission standards. Instead, it set fixed statutory standards for required reductions in levels of hydrocarbons and carbon monoxide (CO) which had to be achieved for passenger cars in the 1975 model year. In particular, section 202(b) of the amended Act required that 1975 exhaust emissions of hydrocarbons and carbon monoxide had to be reduced at least 90 percent from the permissible emission levels for the 1970 model year.

Senator Muskie, the principal sponsor of the 1970 amendments, summed up the need for legislation as follows:

> "In 1968, moving sources were responsible for more than 42 percent of the total emissions of the five major pollutants—including 64 percent of the carbon monoxide and 50 percent of the hydrocarbons. In health effects, these pollutants mean cancer, headaches, dizziness, nausea, metabolic and respiratory diseases, and the impairment of mental processes. Clearly, solving the air pollution problem depends on the achievement of significant reductions in the emissions from automobiles. Clearly protection of the public health requires quick and drastic reductions.
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> * * * *

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tion Control Act—P.L. 89-272 (October 20, 1965), the Clean Air Act Amendments of 1966—P.L. 89-675 (October 15, 1966), the Air Quality Act of 1967—P.L. 90-148 (November 21, 1967), the Clean Air Amendments of 1970—P.L. 91-604 (December 31, 1970), the Comprehensive Health Manpower Training Act of 1971—P.L. 92-157 (November 18, 1971), the Energy Supply and Environmental Coordination Act of 1974—P.L. 93-319 (June 22, 1974), Clean Air Act Amendments of 1977—P.L. 95-95 (August 7, 1977), and Safe Drinking Water Act of 1977—P.L. 95-190 (November 16, 1977).

"Detroit has told the Nation that Americans cannot live without the automobile.

"This legislation would tell Detroit that if that is the case, they must make an automobile with which Americans can live." [4]

Carbon monoxide was singled out in the legislation because of its effects on human health. The first annual report of the President's Council on Environmental Quality was placed in the record of the Senate debates on the 1970 amendments and contains the following short description of carbon monoxide and its effects on health:

"Carbon Monoxide (CO) is a colorless, odorless, poisonous gas, slightly lighter than air, that is produced by the incomplete burning of the carbon in fuels. Carbon monoxide emissions can be prevented by supplying enough air to insure complete combustion. When this occurs, carbon dioxide, a natural constituent of the atmosphere, is produced instead of carbon monoxide.

"Almost two-thirds of the carbon monoxide emitted comes from internal combustion engines, and the overwhelming bulk of that comes from gasoline powered motor vehicles.

* * * *

"When carbon monoxide is inhaled, it displaces the oxygen in the blood and reduces the amount carried to the body tissue. At levels commonly found in city air, it can slow the reactions of even the healthiest persons, making them more prone to accidents. Moreover, it is believed to impose an extra burden on those already suffering from anemia,

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[4] 1 Leg. Hist. 228-29. (The legislative history of the 1970 Amendments is collected and reprinted in *A Legislative History of the Clean Air Amendments of 1970* (2 volumes) 93d Cong., 2d Sess., Ser. No. 93-18 (1974), and will be cited as "—— Leg. Hist. ——".)

diseases of the heart and blood vessels, chronic lung disease, overactive thyroid, or even simple fever. Cigarette smokers, who are already inhaling significant amounts of CO in tobacco smoke, take in an additional burden from polluted air.

"Studies have shown that exposure to 10 parts per million of CO for approximately 8 hours may dull mental performance. Such levels of carbon monoxide are commonly found in cities throughout the world. In heavy traffic situations, levels of 70, 80 or 100 parts per million are not uncommon for short periods." [5]

Acting in accordance with the Congressional directive to reduce emissions by 90 percent, EPA issued regulations in 1971 for the 1975 model year limiting hydrocarbon and carbon monoxide emissions to .41 and 3.4 grams per mile, respectively. However, the major automobile manufacturers, including Chrysler, petitioned the Agency in 1972 to suspend the 1975 standards for carbon monoxide and hydrocarbons for one year pursuant to section 202(b)(5) of the Act. This section allows the Agency to suspend the effective date of the standards for one year if the technology available to meet the standards is not available and other conditions are satisfied. The manufacturers' petitions were at first denied. However, as a result of court appeals,[6] the denial was remanded for reconsideration, and based on further evidence and court-established guidelines, the 1975 standards for carbon monoxide and hydrocarbons were suspended for one year.[7] Interim standards for the two categories were established instead: 15 grams per mile for carbon mono-

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[5] 1 Leg. Hist. 244-246.

[6] *International Harvester* v. *Ruckelshaus*, 478 F.2d 615 (D.C. Cir. 1973).

[7] 38 Fed. Reg. 10317 *et seq.* (April 26, 1976).

xide, in lieu of the 3.4 standard, and 1.5 grams per mile for hydrocarbons, in lieu of the 0.41 standard.[8]

It is this relaxed interim standard for carbon monoxide which governs the instant recall proceeding.

Recall. Authority to require an automobile manufacturer to recall a class or category of automobiles for failure to meet applicable emission standards while in actual use, and to require the manufacturer to remedy the failure at its own expense, is provided in section 207(c)(1) of the Act:

> "If the Administrator determines that a substantial number of any class or category of vehicles or engines, although properly maintained and used, do not conform to the [emission standard] regulations . . . , when in actual use throughout their useful life . . . , he shall immediately notify the manufacturer thereof of such nonconformity, and he shall require the manufacturer to submit a plan for remedying the nonconformity of the vehicles or engines with respect to which such notification is given . . . ."

It is clear from the legislative history that Congress fully intended the automobile manufacturer to bear the lion's share of responsibility for in-use emission nonconformities. As stated in the Report of the Senate Committee on Public Works:

> "Substantial deterioration from the emission standard would mean that the manufacturer was not designing emission control systems which meet the intent of this legislation. It would mean that air quality standards in regions throughout the Nation would not be effectively maintained, and it would

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[8] *Id.* at 10324. *See* also 40 CFR § 85.0751(A)(1)(ii) (1975). Lower interim standards were set for California.

mean that potentially billions of dollars of consumer investment would be to no purpose." [9]

At the same time, however, the roles of the automobile operator and the service industry did not go unrecognized; the realities of the interrelationship between manufacturer, operator and mechanic were fully debated before Congress allocated to each his own respective share of the overall responsibility for ensuring that the emission standards were met. Senator Muskie noted the relationship between the manufacturer and the operator:

> "We understand that it is not presently possible to build a maintenance-proof, clean car, but that it is possible—with the use of a system that is built with some durability in it and some responsibility imposed upon the operator—to assure reasonably clean operation of such an automobile. We have to have the two. One without the other is like a one-legged man." [10]

Senator Allott observed, however, that the service industry was a "weak spot" in the proposed legislation.

> "First, where is an operator going to get the maintenance necessary to keep his car operating at the supposed level as when he purchased it?
>
> "My experience with various cars, and I am sure it is no different from anyone else's in the Senate, is that, to secure competent maintenance on a car at the present time in any respect is almost an impossibility. In fact, even for rather simple operations, it is nothing unusual to have to take back the car two or three times.
>
> "So that is a weak spot in the bill. Whether we can do anything about it, I do not know, but it certainly is a weak spot in the bill." [11]

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[9] 1 Leg. Hist. 430.

[10] *Id.* at 332.

[11] *Id.* at 333.

Senator Muskie acknowledged the maintenance problem, but nevertheless insisted that the automobile industry would have to shoulder primary responsibility for emission failures.

> "The industry recognizes that the American motorist is not a good maintenance engineer. Therefore the industry has worked to make the car maintenance proof.
>
> "I think the greatest problem the industry faces is the shortage of mechanics across this country. . . .
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> * * * *
>
> "We cannot solve the problem of whatever technology the industry chooses to put its bets on. All we can do is to set the standards.
>
> "The automobile industry has created all of the problems from the top to the bottom. The corner service station is related to the fact that Detroit built an automobile with an internal combustion system.
>
> * * * *
>
> "The key to controlling the situation is in Detroit. . . .
>
> "So if the bill is weak in not providing for the maintenance problems, I would welcome an amendment that would cure that weakness. But I do not think there is any way of writing a law that will create maintenance capability all across the country. Only the automobile industry can do that." [12]

The resulting legislation substantially reflects Senator Muskie's views on allocating responsibility for noncompliance with the emission standards.

B. *The Properly Maintained Requirement*

The terms of section 207(c)(1) of the Act provide that the recall determination must relate to vehicles which are

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[12] *Id.* at 334-335.

"properly maintained." As discussed in detail later on in this decision, the record in this proceeding conclusively establishes that the cause of excessive carbon monoxide emissions in the Chrysler recall class vehicles is attributable to misadjustments of the carburetor idle mixture adjustment and that such misadjustments were performed in a manner inconsistent with or contrary to the manufacturer's written specifications. Based in part on Chrysler's own admissions, the record also establishes that such misadjustments were encouraged or fostered by the design of Chrysler's emission control system and its carburetor adjustment procedures. Furthermore, the record convinces me that Chrysler should have foreseen the possibility of widespread misadjustments occurring in the recall class vehicles as a consequence of its emission system design and adjustment procedures and that such misadjustments would result in a substantial number of the recall class vehicles exceeding the Federal emission standard for carbon monoxide. Whether the recall order can be sustained as a matter of law under these circumstances is the pivotal issue in this proceeding.

The term "properly maintained" is not defined in the Act, but the parties and the presiding officer agree that its meaning is found by reference to section 207(c)(3) of the Act, which provides in relevant part as follows:

> (3) The manufacturer shall furnish with each new motor vehicle or motor vehicle engine such written instructions for the maintenance and use of the vehicle or engine by the ultimate purchaser as may be reasonable and necessary to assure proper functioning of emission control devices and systems.

Thus, a vehicle is properly maintained if it is maintained in accordance with "written instructions for the maintenance and use of the vehicle or engine by the ultimate purchaser." [13] This interpretation is reinforced by the

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[13] Initial Decision at 6.

fact that it is consistent with the related warranty provisions of section 207 of the Act. Section 207(b) requires the manufacturer to warrant that if a given vehicle does not conform to applicable emission standards at any time during its useful life, then the manufacturer will remedy such nonconformity at its own expense. Section 207(b)(2)(A) goes on to provide, however, that such warranty is only effective if "the vehicle or engine is maintained and operated in accordance with instructions under subsection (c)(3)," *i.e.*, if it is maintained in accordance with the written maintenance instructions which the manufacturer is required to furnish to the ultimate purchaser. The presiding officer also found that the phrase "properly maintained" has a technical meaning within the automobile industry, and when used within the industry, means "maintained in accordance with the manufacturer's [instructions or] specifications." [brackets in original].[14]

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[14] Initial Decision at 12. The basis for this finding is doubtful if it is intended to suggest that the manufacturer's specifications can dictate the standard for proper maintenance in lieu of or contrary to reasonable and necessary written instructions furnished to the vehicle owner as required by section 207(c)(3). However, it correctly describes the controlling facts in this instance because Chrysler affixed a label under the hood of each recall class vehicle setting forth the manufacturer's specification for idle CO adjustment and a brief description of the required service procedure. EPA Ex. 48 at 25.9 (sample label). The owner's manual contains the only other written instructions furnished to the owner, but they are no more than a maintenance schedule which simply directs the owner to "check and adjust [the idle mixture] as required" at 15,000 mile intervals and to have the vehicle inspected and serviced "anytime a malfunction is observed or suspected." EPA Ex. 7 at 35. The more detailed service procedures needed to make the correct adjustment are described in a separate publication that is not part of the written instructions furnished to the owner. EPA Ex. 48

In order to support a recall action, EPA, as the proponent of the recall order, has the burden of proving that the requirements of section 207(c)(1) of the Act are satisfied, which includes proving that a substantial number of in-use vehicles of the recall class exceed the applicable Federal emission standard *although properly maintained and used.*[15] EPA contends that its burden of proof is met by looking at the actions of the owner in bringing the vehicle to a bona fide service establishment at the intervals specified by the manufacturer and that the manufacturer can rebut evidence to that effect by showing that the service and maintenance operations performed on the vehicle were done incorrectly and that such incorrect performance was not reasonably foreseeable.[16] The presiding officer rejected EPA's formulation of the standard for burden of proof. Instead he observed that "The action of the vehicle owner in bringing the vehicle to a service organization is certainly the key as to whether a given vehicle is properly maintained and used, *but it is actual maintenance performed on the vehicle which is the determining factor.*" [17] (Emphasis added.) He also concluded that "The 'properly maintained' provisions relate *solely to the condition of the vehicle* and not

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("Chassis Service Manual 1975"). The parties agreed that the written instructions furnished by Chrysler for the proper maintenance of the recall class vehicles satisfied the requirements of section 207(c)(3) of the Act. This agreement does not extend, however, to the service procedures, which EPA argues are complex and time consuming and have been a significant issue throughout the proceeding. EPA Appeal Brief at 21, n. 2.

[15] Chrysler does not contest the presiding officer's finding that the vehicles were "properly used" and that such use is not an issue in the proceeding. *See* Initial Decision at 26.

[16] EPA Appeal Brief at 25.

[17] Initial Decision at 13.

simply to the actions of the vehicle owner in seeking maintenance at the proper intervals." [18] (Emphasis added.) In essence, this further refinement on the meaning of "properly maintained" represents Chrysler's position. The significance of this for Chrysler is apparent. The Chrysler written instructions, *i.e.*, the owner's manual maintenance schedule and, in particular, the underhood label,[19] require the idle mixture to be adjusted to a precise specification at 15,000 mile intervals, but EPA's recall action is premised on the idle adjustment being misadjusted, *i.e.*, not set to Chrysler's specifications. Thus, if one looks "solely to the condition of the vehicle," as the presiding officer says, in order to determine whether the vehicle is properly maintained, it is apparent that under this definition the recall class vehicles are not "properly maintained" for purposes of section 207 (c) (1). However, further gloss was added to the definition which had the effect of changing this conclusion.

In accordance with instructions in the owner's manual which direct the owner to have the vehicle inspected and serviced "anytime a malfunction is observed or suspected," [20] a number of the vehicles examined by EPA were returned for unscheduled maintenance before reaching the 15,000 mile interval. The presiding officer found that indications of misadjustments in these vehicles indicated that the unscheduled maintenance involved adjustment of the idle mixture based upon a complaint of driveability problems by the vehicle owner.[21] After noting that the unscheduled maintenance may have been "incorrect" maintenance, he observed that, "It would seem that

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[18] *Id.* at 11-12.

[19] *See* note 15, *supra.*

[20] EPA Ex. 7 at 35.

[21] Initial Decision at 24.

in order to satisfy the customer it was the only maintenance under the circumstances when carburetor design, etc., are considered." [22] Consequently, he adopted the following additional interpretation of the "properly maintained" requirement:

> "I find that for purposes of meeting the "properly maintained" criterion of Sec. 207(c)(1) a vehicle has been properly maintained in accordance with the Owner's Manual maintenance instructions, as far as the emission system is concerned, when the vehicle has not reached 15,000 miles and has not otherwise been returned for any relevant or scheduled service to such emission system." [23]

Chrysler argues against this interpretation, contending that it is inconsistent with the presiding officer's earlier interpretation which states that it is the actual maintenance performed on the vehicle which is the determining factor. Chrysler also points out that even if this interpretation is only intended to operate as a rebuttable presumption, the evidence actually shows that many of the vehicles under 15,000 miles had been misadjusted and therefore they were not in fact properly maintained.

The problem with all of these interpretations of the "properly maintained" criterion is that they place undue emphasis on the text of the words "properly maintained" without examining the purpose or function of the "properly maintained" criterion in the overall statutory scheme. As a consequence, the original intent of the legislation becomes obscured. An inquiry into the text alone is not sufficient for purposes of determining the extent of the Agency's recall authority under section 207(c)(1) of the Act.

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[22] *Id.* at 25.

[23] *Id.* at 25.

As noted earlier, the statutory scheme of the Clean Air Act, and section 207(c)(1) in particular, is the deliberate result of an effort by Congress to allocate responsibility for emission nonconformities among the manufacturer, the vehicle owner and the mechanic. Congress intended the automobile manufacturer to bear primary responsibility for in-use emission nonconformities; however, at the same time, it did not intend to impose a duty on the manufacturer to produce a maintenance free automobile. Had Congress intended the manufacturer to build a maintenance free automobile, the phrase "although properly maintained and used" would not have been needed in section 207(c)(1) of the Act. Instead, Congress fully recognized that the vehicle owner was under a duty to exercise some responsibility for the maintenance of the vehicle if the purposes of the Act were to be achieved. Thus, in allocating these responsibilities for purposes of recall pursuant to section 207(c)(1), Congress included the "properly maintained" language to ensure that the manufacturer would not have to bear the responsibility for an in-use emission nonconformity when the fault properly belonged with the vehicle operator. In other words, the purpose of that language must be viewed as a method of providing the manufacturer with a *defense* to a recall action if some other person is primarily responsible for the nonconformity. It is included to ensure that the Congressional scheme for allocating responsibility for in-use emission nonconformities is preserved. It has no other operative effect in terms of either defining or limiting the manufacturer's or anyone else's responsibilities for emission nonconformities.[24]

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[24] As used here, the term "defense" is not intended to be used in the conventional legal sense of the term, where the party seeking to avail itself of the defense has the burden of raising it and proving its elements. Instead, it merely describes the practical operation of the phrase "properly maintained" as it relates to the statutory scheme for allocating responsibility for in-use emission nonconformities.

By thus recognizing the function of the "properly maintained" language in section 207(c)(1) as a form of defense to a recall action, it becomes apparent that Congress did not intend the manfacturer to escape responsibility for in-use emission nonconformities if the manufacturer itself brought about the condition of misadjustment. Such evident disregard for the goals of the Clean Air Act and the care which Congress exercised in allocating responsibilities for emission nonconformities defies any reasonable reading of section 207(c)(1). It would permit an automobile manufacturer to sell vehicles to the ultimate purchaser in a condition of misadjustment. The manufacturer could then produce evidence of the absence of quality control measures in its assembly line as proof that the vehicles were not properly maintained and therefore not subject to a recall order. Such a result is possible, of course, if the significance of the "properly maintained" criterion is narrowly limited to the text of the words and not to the function they were intended to serve in the overall statutory scheme. Such a result is unwarranted, however, when the "properly maintained" language is viewed as a limited defense which the manufacturer may rely upon whenever the responsibility for an emission nonconformity lies elsewhere.

Chrysler argues that "there is no support whatever in the legislative history for distinctions between improper maintenance attributable to the owner and that which may be imputable to the manufacturer, and the unqualified language of that section [207(c)(1)] plainly indicates that no such distinction was drawn by Congress." [25] This position totally ignores the wealth of legislative history where Congress, in Chrysler's words, "sought to apportion the responsibility for achievement of cleaner

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[25] Chrysler Trial Brief (Reply) at 9.

automobile performance." [26] It attributes to Congress the absurd intention of allowing a manufacturer to escape liability for recall whenever it, not the owner, is responsible for the emission nonconformities.

Chrysler also contends that "the scheme designed by Congress to promote the common good of Clean Air was not a scheme which, when the owner had acted reasonably and in good faith, pointed solely to the manufacturer for every other responsibility. The players are far more numerous, the responsibilities more dispersed. . . . It is far more likely in this case that it is the service industry —and not the owner or the manufacturer—who is failing to do all that can reasonably be expected to carry its burden to bring about the goal of Clean Air." [27]

I agree with Chrysler that the statutory scheme does not envision recall if primary responsibility for the in-use emission nonconformity is attributable to someone other than the manufacturer. As I interpret section 207(c)(1), EPA must establish that the vehicles would be maintained in accordance with the manufacturer's written instructions *but for the actions of the manufacturer.* EPA's burden of proof is not satisfied by merely showing that the owner or mechanic is not primarily responsible for the condition of improper maintenance; instead, affirmative evidence must be presented which establishes the manufacturer's responsibility. In this proceeding, affirmative evidence was presented to that effect. While that evidence also shows that the service industry does indeed contribute to the condition of improper maintenance (as explained in more detail in Part B), it is clear that the service industry's contribution is the inevitable byproduct of Chrysler's emission system design and service procedures. Consequently, this case is not

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[26] *Id.* at 7.

[27] *Id.* at 2.

one where responsibility is placed on the manufacturer simply because there is nowhere else to place it. On the contrary, primary responsibility clearly belongs with Chrysler, not the owner or the mechanic. Therefore, the recall class vehicles are "properly maintained" for purposes of section 207(c)(1) of the Act.

Chrysler's position also fails to give appropriate weight to the fact that the manufacturer's liability under section 207(c)(1) is virtually absolute. The Clean Air Act does not limit the scope of the manufacturer's liability by prescribing a standard of care which the manufacturer must exercise in producing vehicles and thereafter attach liability on the basis of whether the standard of care has been met. Instead, the Act imposes a duty on the manufacturer to produce vehicles that will meet the emission standards regardless of the care exercised in the manufacturing process. The only exception to the manufacturer's liability under section 207(c)(1) is that which is embodied in the phrase "although properly maintained and used." However, the legislative history makes it abundantly clear that this exception (to an otherwise absolute standard of liability) was included in contemplation of the situation where the vehicle owner or the mechanic failed to carry out his share of the total responsibility for ensuring that the goals of the Clean Air Act were met. In other words, the exception contemplates a situation where the cause of the emission nonconformity is beyond the practical limits of the manufacturer's control. There is no indication that Congress intended this exception to include a situation where the cause is within the manufacturer's control. Indeed, even to suggest that such an exception was ever contemplated by Congress makes the mind swirl. It is inconceivable that Congress would first define the limits of the manufacturer's liability so broadly, next carve out a reasonable exception to that liability for circumstances beyond the

manufacturer's control, and then finally, without a hint of what it planned, topple this logical statutory scheme by immunizing the manufacturer from liability where the cause of the emission failure is within the practical limits of its control.

The specific reasons for concluding that Chrysler is responsible for the misadjustments and the resulting emission nonconformities in a substantial number of the recall class vehicles are discussed below.

C. *Chrysler's Responsibility for the Misadjustments*

In order to meet the 1975 emission standard for carbon monoxide in the recall class vehicles, Chrysler installed catalytic converters. These converters reduce emissions by about 60 to 80% when supplied with adequate oxygen in the exhaust stream. The catalyst causes the carbon monoxide (CO) and hydrocarbons coming from the engine to combine with oxygen in the exhaust stream to form water and carbon dioxide, two harmless substances. The presence of enough oxygen in the exhaust stream to oxidize all the emission is essential to making the catalyst effective. If the supply of oxygen is insufficient to oxidize all the emissions, the operation of the catalyst is impaired or rendered ineffective.

The flow of oxygen is controlled in part by the carburetor idle mixture screws. These screws can be adjusted to control the "richness" or "leaness" [sic] of the air-fuel mixture. A lean mixture is one where more air enters the engine than is needed to burn all the fuel. The mixture is richened by increasing the amount of fuel entering the engine relative to the amount of air. The amount of oxygen that is ultimately available for use in the catalyst can be supplied either by adjusting the carburetor mixture "lean" enough to provide excess oxygen or by use of a mechanical air pump which pumps air into the exhaust system ahead of the catalytic con-

verter. Chrysler chose the former method for the recall class vehicles (except for vehicles sold in California), which is the least costly of the two.[28]

An overly rich idle air-fuel mixture was found by the presiding officer to be the primary factor causing nonconformity with the Federal carbon monoxide emission standard.[29] The cause of the overly rich idle air-fuel mixture was due to a condition of misadjustment of the carburetor idle mixture.[30]

Cause of Misadjustments. Misadjustments in idle mixture occur as a result of a number of factors inherent in the recall class vehicles that make the likelihood of proper adjustment exceedingly small for in-use vehicles serviced under ordinary maintenance conditions. The presiding officer concluded that "the design of the emission control system, including the carburetor, encourages or fosters the gross misadjustments which have been shown to exist and therefore should have been foreseen." [31] Significantly, Chrysler's carburetor design engineer admitted that catalyst efficiency was not taken into account at the design stage of the carburetor.[32]

Substantial evidence was presented by EPA during the course of the hearings to show that a significant number of owners encountered problems with driveability and idle roughness in the recall class vehicles. For example, the presiding officer found the 58% of owners contacted in two test programs had observed these problems in

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[28] EPA Ex. H at 10-11 (Gockel).

[29] Initial Decision at 89 (Finding 39).

[30] *Id.* (Findings 40-41).

[31] *Id.* at 69.

[32] Tr. 3819-20, 3857 (Harris); *accord* EPA Ex. M at 36 (Jacob).

their vehicles and 43% of them stated that they had returned their vehicles for service to correct the problems.[33] Chrysler carburetor warranty repair records indicate that 144,891 warranty claims were submitted with respect to the carburetor, indicating that a large percentage of the approximately 208,000 vehicles of the recall class were returned for repairs during the effective period of the warranty (12 months/12,000 miles).[34]

These findings are significant because the record further shows that one method of improving driveability and idle quality is to adjust the idle mixture to a setting richer than Chrysler's specification.[35] The best idle quality on the recall class occurs when the idle CO level is 5.0 - 8.0%, *i.e.*, far in excess of the 1.0% level which has been shown to render the catalyst ineffective.[36] Chrysler's carburetor design engineer admitted that when the idle CO is dropped to Chrysler's specification of 0.3%, rpm and vacuum changes occur, which "obviously" affects idle quality.[37] Chrysler's chief engineer for emissions systems and performance engineering even went so far as to say that he would have been "delighted" if Chrysler could have specified 4.0% idle CO, thereby giving the customer the best idle quality.[38]

Given customer dissatisfaction with the idle quality and the fact that the best idle quality is achieved at an idle

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[33] Initial Decision, Finding 90.

[34] *Id.*, Finding 92.

[35] EPA Ex. G at 30 (Gockel); EPA Ex. H at 31 (DeKany); Tr. 11-130 (Heinen); Tr. 3228 (Fagley); Tr. 2787-88 (Goodwillie).

[36] Tr. 3898 (Harris); EPA Ex. G at 10-12 (Gockel).

[37] Tr. 3898-99 (Harris).

[38] Tr. 2792-93 (Goodwillie).

setting far richer than Chrysler's specifications, mechanics are motivated to misadjust the vehicles. Several design elements of the Chrysler emission system and adjustment procedure reinforce these obvious incentives to compromise the Chrysler specifications. Mr. Jack L. Gockel, an expert in automobile emissions control and consultant to EPA, surveyed 27 Chrysler mechanics in addition to conducting his own analysis and review of the recall class vehicles, and concluded that most mechanics are not using the Chrysler idle set procedure because:

1. They work on a commission basis and the procedure is time consuming. Specifically, most mechanics stated that Chrysler's warranty procedure does not allow enough time to complete the procedure, and therefore the mechanics will not be adequately reimbursed for labor costs.

2. The Chrysler procedure usually results in an unacceptable idle quality and if the customer returns, Chrysler will not reimburse the mechanic for a second adjustment.

3. There are alternative procedures available to mechanics which are less time consuming and cumbersome and which satisfy the customer.[39]

In addition to these incentives to adjust the idle mixture richer than specification, a rich adjustment is also used by mechanics to mask engine problems and eliminate driveability deficiencies. This is a matter of common knowledge in the automobile industry. For example, when Chrysler employed technology to limit the idle mixture adjustment range in its 1968 carburetors, it specifically advised mechanics that the limiting features of the adjustment would prevent them from using over-rich idle adjustment as a cover-up for poor compression, incorrect spark plug gaps, off-the-mark timing and so on.

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[39] EPA Ex. G at 23 (Gockel).

They were warned that all other engine, ignition and carburetor adjustments would have to be correct in order to obtain a good idle within the adjustment limits of the 1968 idle mixture screws.[40] Such statements amply demonstrate that Chrysler was well aware that rich idle mixture adjustments are frequently used by mechanics to compensate for other driveability or vehicle problems.

The 1968 limitations on the adjustment range were implemented by means of internal idle mixture circuit calibrations, but this practice was discontinued in later carburetor designs (including the 1975 models) in favor of less expensive external limiter caps which are easily removed by the mechanics. However, even with the limiter caps in place, the adjustment range in the recall class vehicles still permits adjustment far in excess of Chrysler's specifications. Thus, Chrysler did not provide any effective means to limit idle adjustment for the recall class vehicles. General Motors and Ford, on the other hand, placed limiter caps at the rich stop in the 1975 models, i.e., where idle CO does not exceed specifications.

Based on evidence showing that many of the recall class vehicles had damaged or removed external limiter caps, Chrysler speculates that it is virtually certain that had it used more restrictive limiter caps, even greater numbers of limiter caps would have been rendered inoperative. Chrysler contends that abuse and removal of limiter caps is a problem that pervades the entire industry and that setting idle with an exhaust gas analyzer, as prescribed in its service procedures, is the most effective means to ensure that the standard will be met.[41] However, this argument ignores several important considerations.

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[40] EPA Ex. 47.

[41] Chrysler Appeal Brief at 30.

First, the presence of damaged or missing idle limiter caps does not necessarily mean that an exhaust gas analyzer has not been used in accordance with Chrysler's service procedures or that the idle mixture screws have been misadjusted. The carburetors used in the recall class vehicles are equipped with two idle mixture screws. If these screws are not in balance, rough idle and low speed surge can occur as well as making emission level adjustment difficult. If the mechanic suspects that the screws are unbalanced, he must remove the plastic limiter caps by prying them off with pliers in order to perform the recommended service procedure to correct the imbalance.[42] Although he should reinstall the caps when he is finished, it is not unreasonable to assume that this step is frequently eliminated since the presence or absence of the limiter caps does not affect the performance of the vehicle.

Second, the exhaust analyzer advocated by Chrysler, which is the *sine qua non* to effective implementation of Chrysler's adjustment procedure, is cumbersome and not always reliable. A dealership survey indicated that a significant number of exhaust analyzers have leaks large enough to cause incorrect CO readings, that the analyzers are often not functioning properly or calibrated correctly, and that most dealers were not using the upstream tap for adjustment.[43] Moreover, proper use of the upstream tap requires the mechanic to either crawl under the vehicle to make the tap connection (ahead of the catalytic converter) or to use a lift to raise the vehicle. If a lift is employed, the vehicle must then be lowered before the mechanic can complete the analysis and idle mixture adjustment. Removal of the tap at completion of the procedure requires a reversal of the procedure.

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[42] Chrysler Ex. C-96 at 10.

[43] EPA Ex. B at 62-63 (Dietrick); EPA Exs. 120-121.

This time-consuming procedure contrasts with what mechanics historically have been trained to follow in making idle adjustments, namely, adjustment of the idle mixture using a tachometer and relating engine idle speed to the idle mixture setting. If Chrysler's recommended adjustment procedure is not used, or if the analyzer is not functioning properly, it is unlikely that the idle mixture would be adjusted to Chrysler's specification and therefore meet the emission standard.[44]

Third, the idle mixture adjustment is highly sensitive to small turns of the adjustment screws. The mechanic who does not use the exhaust analyzer, for whatever reason, is likely to adjust the idle CO concentration from anywhere between 0.3% and 4.0-5.0% with just ½ turn of the screw. The sensitivity of the idle CO response to screw turns is caused by a large tip angle of the screw. The Chrysler tip angle is 25° compared with 12° to 15° used by other major manufacturers in 1975 and by Chrysler in 1968. In a letter to New Jersey officials, Chrysler admitted that the cause of emission nonconformities or "misadjustment malaise" was in part due to the Chrysler idle adjustment system that is "somewhat" more sensitive to screw turns than its competitor's products.[45]

Finally, in the same letter, Chrysler also noted that the absence of an air pump was another reason why the recall class vehicles were not doing as well as competitor's models. An air pump reduces carbon monoxide emissions and eliminates the need for precise idle adjustments by supplying sufficient oxygen to burn excessive levels of carbon monoxide resulting from rich idle mixture misadjustments. In other words, with the use of

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[44] EPA Ex. C at 23-24 (Gockel); EPA Ex. H at 25-26 (DeKany).

[45] EPA Ex. 91.

an air pump, the idle mixture can be adjusted to best idle quality without causing excessive carbon monoxide emissions. This is shown graphically in EPA Ex. 75 where the carbon monoxide emissions of Chrysler and Ford 1975 prototype vehicles are compared with and without air pumps over a wide range of idle CO adjustments. With air pumps attached both models of vehicles can be adjusted to 7.0-8.0% idle CO without exceeding the Federal standard of 15 grams/mile for carbon monoxide, whereas without air pumps the Chrysler vehicles exceed the standard at 1.0% idle CO and the Ford vehicles exceed it at approximately 3.0%.

Air pump technology was clearly available for use in the recall class vehicles. In fact, Chrysler used air pumps on recall class vehicles sold in California where 1975 carbon monoxide emission standards were more restrictive than the Federal standard. Air pumps would have added approximately $50.00 to the cost of each vehicle, an amount which can not be considered an insurmountable draw back. Air pumps also cause a slight reduction in fuel economy; however, the precise amount of reduction is not established in the record.[46]

Prevalence of Misadjustments. The Presiding Officer found that "gross conditions of idle misadjustment" were occurring in samples of recall class vehicles tested and that they were occurring early in the 1975 model year.[47] The most decisive and objective evidence establishing the high number of misadjustments appears in the results of the Olson Program, where the EPA Mobile Sources Enforcement Division contracted with Olson Laboratories, Livonia, Michigan, to test the recall class vehicles

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[46] Tr. 1328 (Gockel); Chrysler Ex. A at 16.

[47] Initial Decision at 18. The "model year" for the 1975 recall class vehicles began around September 1974, when they were first introduced into commerce. Tr. 3479 (Freers).

to confirm or reject growing indications of vehicle nonconformities with the Federal emission standards as evidenced by the results of other State and Federal emissions testing programs. The program involved the selection of a random sample of the recall class vehicles, application of standard statistical techniques to project the results of the sample population to the recall class, and use of both the idle emission or so-called "short" test for measuring exhaust emissions and the Congressionally mandated test procedure developed by EPA, known as the Federal Test Procedure (FTP).[48]

The special feature of the Olson Program that is absent in the other Federal and State programs is that emissions were measured both before and after maintenance was performed on the sample vehicles. Eighteen of the 20 vehicles in the "as received" condition had idle mixtures richer than the manufacturer's specifications. All of these failed the FTP tests. Of these 18 vehicles, 13 passed the FTP when the idle mixture was adjusted to the manufacturer's specifications. The other 5 experienced an average 34% reduction in carbon monoxide emissions.[49]

Olson Program

Engine:	360 CID		400 CID	
	As Received	After Maint.	As Received	After Maint.
Number Tested:	10	10	10	10
Average CO Emissions (grams/mile)*	69.02	11.35	33.61	15.45
Percent Over CO Standard	100%	20%	80%	30%

* 1975 Federal CO Standard: 15 grams/mile.

[48] *See* discussion *infra* at 29-31 [93a-95a] for an explanation of the differences between the short test and the FTP.

[49] EPA Ex. G at 12-13 (Gockel).

preconditioning the vehicles for a 12 hour period or more (primarily for the measurement of evaporative emissions), and then subjecting them to a simulated (stationary) test drive on a dynamometer with the transmission engaged and the rear wheels turning. A system of weights and other simulated loads are transmitted by the dynamometer to the rear wheels, and the vehicle is then "driven" over a seven mile driving cycle which lasts approximately 23 minutes. The cycle includes periods of idling, accelerations, high and low speed cruises, decelerations, stops and starts. Other test parameters, such as temperature of the laboratory and fuel are controlled. Exhaust emissions are collected in bags attached to the vehicle's exhaust and are then analyzed. The resulting measurement constitutes a measurement of *mass* emissions and is expressed in grams per mile, the same unit of measurement as the Federal emissions standard.

The "short" test (also referred to as the idle emissions test) takes about a minute to complete and is taken while the vehicle is standing at idle. The instrument used to measure the emissions is relatively inexpensive and is similar to the one recommended by Chrysler in its service procedures for adjusting the idle air-fuel mixture on the recall class vehicles.[52] The short test is also commonly employed in State Inspection-Maintenance (I/M) Programs. Unlike the FTP, however, the short test measures the *concentration* (not mass) of carbon monoxide emissions and expresses the resulting measurement as a percentage of carbon monoxide concentration (%CO). Consequently, in order to use the short test results to determine whether the Federal standard has been exceeded, the percentage of *concentration* must be correlated with the FTP. The point at which a short test measurement is deemed to be a valid predictor of an FTP failure is known as the "cut point." While the exact cut point for

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[52] Chrysler Ex. J at 4-5.

The prevalence of misadjustments is also indicated by various other emissions programs using the "short" test rather than a combination of the short test and the FTP as was the case in the Olson Program. While these tests lack the definitiveness of the Olson Program, in part because there are no "before" and "after" maintenance comparisons, and in part because they employ the short test only, they nevertheless can be reasonably relied on in the aggregate as strong indicators of the existence of a severe misadjustment problem in the recall class vehicles. Whether any single one of them would provide an independent basis to support a finding of widespread misadjustment in the recall class vehicles is not a matter that has to be decided for purposes of this decision; it is sufficient to note here that, taken together, these tests corroborate the Olson Program test results.[50] However, before discussing the specific results of the tests, and Chrysler's objections thereto, a short discussion of the differences between the short test and the FTP is necessary.

The FTP was developed by EPA primarily for testing new prototype vehicles and was intended to introduce a stringent measure of standardization into the process of certifying vehicles.[51] Briefly, it consists of preparing and

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[50] In a letter to officials of the State of New Jersey concerning the high number of emission non-conformities found in the State's idle emission test program, Chrysler stated that "the data we have gathered . . . supports our contention that the basic problem is idle mis-set by owners, dealers and/or repair shops." EPA Ex. 91. Similarly, an internal Chrysler report states: "Our conclusion from this study is that the field vehicles showing high idle CO are the sole result of someone misadjusting the idle setting." EPA Ex. 178; *accord* Tr. 3525 (Freers).

[51] The full FTP for 1975 vehicles appears at 40 CFR § 85.075-9 through 27.

carbon monoxide is disputed, with Chrysler witnesses taking the position that it ranges anywhere from 1.5 to 2.0% and EPA witnesses arguing for 1.0%, there is little dispute that such a cut point can be established.[53] Evidence was presented by EPA which shows that where both the short test and the FTP were performed on recall class vehicles under laboratory conditions, the vehicles failed the FTP in all cases where the vehicles exceeded 1.0% idle CO concentration under the short test.[54] These data and the other evidence presented do not indicate, however, whether the 1.0% idle CO level is a sufficiently reliable predictor of an FTP failure when the "short" test measurements are not made under laboratory conditions. Consequently, for purposes of this proceeding only, the higher range (1.5-2.0%) is more likely to account for variations in laboratory and non-laboratory conditions and therefore serve as a reliable indicator of an FTP failure.[55]

Chrysler objects to the use of the short test data for purposes of establishing conditions of idle misadjustment

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[53] Compare Tr. 2941 (Fagley), Tr. 2774 (Goodwillie), and EPA Ex. H at 36 (DeKany) with Tr. 3762-65 (Lipson).

[54] EPA Ex. H at 36 (DeKany); EPA Ex. O at 2 (Nussman [sic]); and EPA Exs. 1, 2 and 76.

[55] The presiding officer rejected any use of the short test data to predict an FTP failure. Initial Decision at 31-36. This conclusion fails to give sufficient weight to the fact that there is general agreement that there is a point at which it could be assumed that such a test would predict an FTP failure and that the range of 1.5-2.0% is reliable for most purposes. It should also be noted that the 1.5-2.0% range is probably conservative. No FTP failures were falsely predicted in comparative tests on the basis of short test measurements at any level of CO concentration, and all vehicles in excess of 1.0% concentration exceeded the 15 gram/mile CO standard when tested by the FTP.

in the recall class vehicles because the short tests only measure emissions and, as Chrysler argues, an emission failure alone does not explain the cause of the failure, *i.e.*, whether it is due to misadjustment of the idle mixture or some other cause. Appeal Brief at 18. This argument is certainly correct as an abstract matter, and it points up precisely why the Olson Program "before" and "after" maintenance measurements are so valuable for purposes of identifying the cause of the high emissions in the recall class vehicles. However, in actual practice, the identification of high idle carbon monoxide emissions (without further attempts to isolate the cause) can also serve as a reasonable basis for determining that high idle CO is due to idle misadjustment. On the basis of experience alone it is generally recognized that there is a cause and effect relationship between idle mixture misadjustment and high CO emissions. According to Mr. James S. Freers, Chrysler's emissions system servicing manager from November 1975 to April 1977, the "major" but unquantifiable cause of the high idle carbon monoxide values used by EPA in the hearing was misadjustment of the idle mixture.[56] He also observed: "[i]dle mixture adjustment is the number one cause of high emissions, be it GM, Ford. Idle adjustment is one of the main causes for high emissions, and one of the reasons for high failure rates of many makes." [57] Furthermore, it was Mr. Freers' position that the infrared exhaust gas analyzer specified by Chrysler for use by mechanics who service the emissions system, and which is the same basic type of instrument used in most State I/M programs employing the short test, provides a "foolproof" direct measurement method for the idle mixture adjustment.[58] Similarly, Mr. Ron Householder, an en-

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[56] Tr. 3516-17.

[57] Tr. 3527.

[58] Chrysler Ex. I at 4-5.

gineer with the State of Oregon and manager of its motor vehicle emission program, observed that when cars had to be repaired for carbon monoxide failures, "90% of the reported repairs involved carburetor adjustments." [59] Reliance on short test emission data led Chrysler to conclude in a 1976 letter to officials of the State of New Jersey—concerning the high number of carbon monoxide emission nonconformities found in the State's I/M program—that "the data we have gathered. . . supports our contention that the basic problem is idle mis-set by owners, dealers and/or repair shops." [60] Similarly, in a service memorandum sent by Chrysler to dealerships in New Jersey, "[t]he primary cause of high carbon monoxide emissions [in New Jersey], especially on low mileage vehicles, is incorrect carburetor idle mixture adjustments." [61] Therefore, based on these statements, it is reasonable to conclude that the State I/M and other short test results corroborate the results of the Olson Program, *i.e.*, that a high number of the recall class vehicles in the field are in a condition of misadjustment. As indicated in the following table, the combined results of these programs show that the frequency and severity of misadjustments and hence, excessive emissions, increases as the vehicle accumulates mileage.

Mileage	Number of Vehicles	Average Idle CO
0-1,000	17	1.9%
1,000-5,000	37	2.2%
5,000-10,000	25	2.9%
10,000-15,000	20	3.1%
above 15,000	10	4.3%

[59] EPA Ex. I at 4.

[60] EPA Ex. 91; *accord* EPA Ex. J at 8 (Elston).

[61] EPA Ex. 92; *accord* Tr. 2095 (Heinen).

The misadjustments are also shown to be uniformly prevalent throughout the country, as indicated by the following table.[62]

Idle Test Data Summary

Test Site	Number Tested	Average Mileage	Average Idle CO	Percent Over 1.0%	Percent Over 1.5%	Percent Over 2.0%
Portland, Oregon	26	3,594	2.0%	69%	62%	42%
Washington, D.C.	19	5,284	2.4%	68%	67%	53%
Cincinnati, Ohio	17	2,410[1]	2.2%	65%	53%	41%
Chicago, Illinois	15	4,208[2]	2.6%	67%	60%	40%
Trenton, New Jersey	5	—	.8%	20%	20%	20%
St. Louis, Missouri	7	7,700	3.3%	57%	57%	57%
Phoenix, Arizona	3	20,980	3.2%	100%	67%	67%
Austin, Texas	8	8,760	4.3%	88%	87%	87%
Detroit, Michigan	20	15,495	3.2%	75%	65%	65%

[1] 1 car—No mileage recorded.

[2] 5 cars—No mileage recorded.

The presiding officer also relied upon short-test data to support conclusions that the recall class vehicles are misadjusted on the assembly line or otherwise before delivery to the purchaser. However, these conclusions are based on idle CO concentration levels averaging less than 1.0%, only a small percentage of which exceed 1.0%.[63] As previously indicated, idle CO measurements at levels below 1.5-2.0% have not been adequately shown by the limited evidence in the record to reliably predict an FTP failure when employed outside the laboratory. Consequently, I decline to accept these data as a basis for concluding that misadjustments are occurring on the assembly line, at new car prep centers, or at Chrysler dealerships before delivery of the vehicle to the purchaser. As noted by Mr. John P. DeKany, then Director of EPA's Emission Control Technology Division, ". . .

[62] From EPA Exs. 1-5.

[63] *See* Initial Decision at 19-20.

definitive proof [of correlation at the 1.0% CO level] must await completion of . . . [another] program." [64]

Misadjustments Foreseeable. The evidence presented by EPA in the form of expert opinion and other proof convinces me that Chrysler should have foreseen the possibility of widespread misadjustments occurring in the recall class vehicles due to the combined effects of the various factors described above and further that such misadjustments would result in a substantial number of the recall class vehicles exceeding the Federal emission standard for carbon monoxide. The rebuttal evidence presented by Chrysler for the most part consists of attempts to isolate an individual factor contributing to the cause of the misadjustments and showing that it alone would not support such a finding. The totality of the evidence is ignored by Chrysler. Nowhere does it present any persuasive evidence that it attempted to assess the combined impact of the various factors contributing to the misadjustments before placing the recall class vehicles in production. On the contrary, the evidence points strongly in the opposite direction. Chrysler's carburetor engineers proceeded independently of its catalyst branch without taking catalyst efficiency into account.[65] As a consequence, an exceptionally high number of the recall class vehicles are not in conformity with the Federal standard.[66]

In support of its contention that the misadjustments were not reasonably foreseeable, Chrysler relies principally on the testimony of Mr. Forrest Cook, Mr. Harry Sherwin and Mr. Charles M. Heinen, three engineers whose experience in the automotive industry and car-

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[64] EPA Ex. H at 43.

[65] See note 33, *supra.*

[66] The number of recall class vehicles exceeding the standard is discussed *infra* in Part D.

buretor design is extensive.[67] Chrysler's position is basically that the expert testimony of these witnesses should be dispositive as to whether the recall vehicles lagged behind the state-of-the art and whether the misadjustments were reasonably foreseeable. Chrysler argues that EPA's evidence, in contrast, is based solely on the testimony of a witness (Mr. Dietrick) whose background is in aeronautical engineering and who, according to Chrysler, had merely conducted a literature search as the basis for his opinions.[68] None of these contentions has any merit. Mr. Dietrick is indeed an aeronautical engineer by training, but he also has a degree in mechanical engineering. In addition, his testimony was not based solely on a literature review, but instead included extensive carburetor adjustment tests performed on recall class vehicles and other vehicles, including those which employed carburetor designs which effectively limited the range of adjustment and which used air pumps to mitigate the impact of carburetor misadjustments.[69] Furthermore, Chrysler completely omits any reference to the fact that EPA's proof was also based on the testimony of Mr. John DeKany, who was then the head of EPA's Emission Control Technology Division and had primary responsibility within EPA for evaluating emission control technology, and on the testimony of Mr. Jack Gockel, an expert in emission control systems.[70] More importantly, however, close examination of the testimony of Chrysler's own witnesses reveals the lack of merit in Chrysler's position and provides the basis for rejecting its rebuttal case.

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[67] Chrysler Exs. C (Cook), F. (Sherwin) and A (Heinen).

[68] Chrysler Appeal Brief at 27, 31-32; *accord* Chrysler Trial Brief (Reply) at 129-131.

[69] EPA Ex. B at 54, 55.

[70] EPA Exs. G (Gockel) and H (DeKany).

For example, Chrysler's Mr. Cook is in fact one of the industry's leading carburetor designers. He is responsible for the design of the Carter carburetor, which competes with the Holley carburetor used in the recall class vehicles, and his experience dates back to the 1940's. However, no weight can be attached to his testimony as it relates to misadjustments occurring in in-use vehicles of the recall class and whether those misadjustments were foreseeable. Among other things, Mr. Cook had never performed an idle mixture adjustment on a recall class vehicle[71]; he had never seen one performed[72]; and he had never conducted any study of the recall class vehicles to determine if the sensitivity of idle adjustment was comparable to or different from that of other vehicles.[73] In addition, Mr. Cook admitted that he had no knowledge of how the Chrysler adjustment procedure was performed in the field and that he did not know why such misadjustments were occurring.[74] Moreover, it turns out that the conclusions he reached regarding the supposed viability of the Chrysler adjustment procedure and the ease with which mechanics could perform it were based on diagnostic use of the procedure at the Carter manufacturing facilities by laboratory mechanics.[75] He stated: "As far as field adjustment and mechanics, I don't think I should speak to that because I don't really know, I am not familiar with dealerships and how they operate."[76] Finally, when confronted with test data showing that a one-quarter turn of the idle adjustment screw would

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[71] Tr. 2417-18.

[72] Tr. 2457.

[73] Tr. 2430-31.

[74] Tr. 2458-60.

[75] Tr. 2443-44, 2458-60.

[76] Tr. 2458.

cause the adjustment to go from best *lean* idle to best *rich* idle, he concluded that he preferred a one-half turn, because "that is where my fingers can do well." [77]

Mr. Sherwin's testimony similarly lacks persuasive force with respect to whether the causes of misadjustment were foreseeable. While Mr. Sherwin is a design engineer with Holley carburetor and participated in the "design" of the Holley carburetor which was used in the recall class vehicles, the term "design," as it is coined by him and by his employer, Holley Carburetor, has a narrow meaning which does not include "calibration," a term that includes more pertinent matters, such as the proper size of idle CO restrictions.[78] Consequently, while his direct testimony contained sweeping statements to the effect that the carburetor used in the recall class vehicles was not significantly different from virtually all carburetors used by other domestic automobile manufacturers, he nevertheless was unable to express an opinion on whether there was a significant difference between a carburetor system that limits the idle CO to 2.0% and one that limits it to 8.0%.[79] Like Mr. Cook, he also had never tested a vehicle of the recall class.[80] In addition, in his capacity as a carburetor "designer," he was not involved with matters concerning the relationship between the number of turns of the adjustment screw and the effect that has on CO concentration.[81] Although he "designed" limiter caps (in the limited sense of determining the material used to make the caps and the fitting of the caps), he did not participate in the more

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[77] Tr. 2456.

[78] *Compare* Tr. 2663-64 *with* Tr. 2667-68.

[79] Tr. 2693.

[80] Tr. 2694.

[81] Tr. 2695-96.

important determination of where they must be placed so as to limit or restrict the adjustment screw.[82] Nor was he familiar with the range of idle adjustment within the constraints of the limiter caps.[83] Finally, he regarded the difference between a 15° tip angle on the adjustment screw and a 25° tip angle as a "calibration" matter, not a "design" matter. These matters which Mr. Sherwin characterized as belonging to the "calibration" area form the core issues with respect to whether Chrysler's carburetor design contributed to the misadjustments. Therefore, Mr. Sherwin's overall conclusions regarding the design of the carburetor cannot be given weight since he was not qualified, by his own admissions, to express opinions on the specific matters of central importance to the issues at hand.

Finally, Mr. Heinen, who is Chrysler's director of emissions/fuel economy, sought to justify his conclusion that widespread, intentional overenrichment of the idle was not expected by asserting that idle adjustment (rich or lean) is just one of several parameters that the mechanic looks at in curing an idle quality, lean surge or hesitation problem.[84] However, while it is correct to say that idle adjustment is just one of the parameters the mechanic *should* examine as a matter of proper diagnostic procedure, the issue of foreseeability is concerned with what Chrysler reasonably expected the mechanic to do when confronted with an idle quality or driveability problem. Viewed from that perspective, the evidence establishes that Chrysler should have reasonably expected the mechanic to include idle adjustment in addition to any other parameters he might look at, and with respect to idle adjustment in particular, Chrysler should have

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[82] Tr. 2702.

[83] Tr. 2703.

[84] Chrysler Ex. A at 10-11.

reasonably expected the mechanic to overenrich the mixture in order to either cure the problems or to mask them. This conclusion is based not only on the opinion of EPA's witnesses,[85] but also on evidence originating with Chrysler. For example, Chrysler's own engineers testified that the best idle quality in the recall class vehicles is obtained by setting the idle at a level considerably richer than Chrysler's specifications.[86] In addition, when Chrysler incorporated internal adjustment limitations in its 1966-68 carburetors to prevent possible accidental misadjustment, the mechanic was expressly warned (in a Chrysler publication) that the limiting features of the adjustment mechanism would prevent him from using over-rich idle adjustments to cover up other engine problems.[87] No mention was made of using a lean idle adjustment, and the mechanism itself did not contain any such limitations on lean adjustments.[88] Consequently, although idle adjustment (lean or rich) may be just one of several parameters the mechanic should look at in diagnosing an engine problem, a rich idle adjustment is in fact commonly recognized as the single most important one which Chrysler would normally expect the mechanic to misadjust in order to cure an idle quality or other driveability problem.

D. *A Substantial Number of Recall Class Vehicles Exceed the Federal Standard for Carbon Monoxide Emissions*

Under section 207(c)(1) of the Clean Air Act, recall is only warranted if a determination is made that a

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[85] EPA Ex. H at 31-35 (DeKany); EPA Ex. G at 36 (Gockel).

[86] *See* text at notes 36-39.

[87] EPA Ex. 47 at 11-12.

[88] *Id.*

"substantial number" of a class or category of vehicles, although properly maintained and used, exceed applicable emission standards in actual use. EPA presented the results of five different emissions testing programs conducted in nine different cities to support its contention that a substantial number of recall class vehicles exceed the Federal standard for carbon monoxide emissions. The presiding officer found that the results of two of the programs, the Olson Program and the Emission Factor Program, met the requirements of section 207(c)(1), whereas the remaining three did not—although he did indicate that they showed the existence of an "emission problem." [89] Chrysler challenges the presiding officer's reliance on the Olson and Emission Factor Programs on a number of different grounds and further asserts that in spite of the presiding officer's apparent rejection of the three other programs for purposes of satisfying the "substantial number" criterion of section 207(c)(1), he in fact relied on them or, alternatively, had to rely on them in order to support his conclusions about the widespread nature of the emissions problem.[90] EPA, on the other hand, argues that the results of the other three programs also meet the requirements of section 207(c)(1) and therefore the presiding officer erroneously rejected them. Chrysler also contends that the phrase "substantial number" means a majority, or at least 40 percent or more. EPA says that less than a majority can constitute a "substantial number." The opposing positions taken by the parties with respect to the legal and factual significance of the results of these emissions programs raise a number of basic questions concerning the type of evidence EPA must present to support a recall order and what number of vehicles must be found in nonconformity with the emission standard for purposes

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[89] Initial Decision at 35.

[90] Chrysler Brief at 17-20.

of satisfying the "substantial number" criterion of section 207(c)(1).

The test results from the Olson and Emission Factor Programs were based on the FTP and were presented by EPA as representative of the recall class vehicle population. Statistical analyses of these test results were performed in order to project the results from the vehicle samples to the total population of recall class vehicles. Based upon the combined results of these two programs, the presiding officer found that 93% of the 360 CID vehicles and 83% of the 400 CID vehicles tested exceeded the emission standard for carbon monoxide. From these results, according to his findings, it can be projected with 95% confidence that not less than 79% of all 360 CID vehicles and not less than 62% of all 400 CID vehicles are exceeding the carbon monoxide emission standard in use. If only the results from the Olson program are relied on, not less than 79% of all 360 CID vehicles and not less than 49% of all 400 CID vehicles are exceeding the standard in use. Extensive testimony with regard to the vehicle selection procedures and statistical analyses of the test results from these two programs is contained in the record. Based on this testimony, the presiding officer found that the vehicles tested were randomly selected and representative of the recall class vehicles.

Chrysler attacks the presiding officer's finding with respect to the use of the Olson and Emission Factor test results by basically arguing that he ignored an important part of the Olson program results and by challenging the statistical representativeness of these two programs. I find Chrysler's contentions to be without merit. The results of these two programs show that a substantial number of the recall class vehicles are exceeding the Federal emission standard for carbon monoxide while in actual use.

Chrysler's first line of attack is based upon the argument that the presiding officer ignored one half of the Olson program test results. It will be recalled that the full FTP was run twice on the vehicles used in the Olson program,[91] once in the "as received" condition and once in the "after maintenance" condition, *i.e.*, after maintenance had been performed on the vehicles in accordance with the written instructions furnished to the owner and also in accordance with Chrysler's written service procedures. The "after maintenance" results show that 20% of the 360 CID vehicles and 30% of the 400 CID vehicles exceed the carbon monoxide emission standard. By projecting these results to the recall class vehicle population, it can be projected with 95% confidence that approximately 3.7% of the 360 CID vehicles and 8.3% of the 400 CID vehicles would exceed the carbon monoxide standards, according to Chrysler's calculations. Under EPA's calculations, the corresponding percentages become 11 and 14 percent, respectively.[92]

EPA argues against the use of the "after maintenance" test results because idle mixture misadjustment, which was found to be the primary cause of the nonconformities in the recall class vehicles, has been completely eliminated from the "after maintenance" results, and therefore, those results are irrelevant to the issues upon which the recall order and hearing were based (except to the extent that these results confirm that idle mixture misadjustment is in fact the primary cause of CO nonconformities in recall class vehicles). Chrysler, on the

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[91] *Supra* at 27-28 [92a-93a].

[92] EPA concedes that it cannot be stated with certainty whether the projected "after maintenance" failure rates would satisfy the "substantial number" criterion and further adds that it is not clear whether the present recall action against Chrysler would have been instituted if the sole data relied upon were the "after maintenance" test results.

other hand, contends that the "after maintenance" results show that there is not a substantial number of carbon monoxide nonconformities when the vehicles are adjusted in accordance with the Chrysler service procedures and the written instructions furnished to the vehicle owner. In other words, Chrysler contends that the "after maintenance" results reflect the true condition of the recall class vehicles when "properly maintained."

I do not find that the arguments of either party are particularly to the point; however, I do agree with EPA that the "after maintenance" results are irrelevant.[93] The basis for my conclusion is found in the language of section 207(c)(1), wherein the recall determination must be based upon a finding that a substantial number of vehicles exceed the applicable emission standard when "in actual use," although properly maintained and used. The phrase "in actual use," does not, in my opinion, refer to vehicles which have been maintained under the conditions found in the "after maintenance" part of the Olson program. It is true that the maintenance that was performed there was done in accordance with the Chrysler service procedures and the written instructions furnished by Chrysler to the vehicle owner. However, the circumstances under which the maintenance was performed does not in any way reflect proper maintenance of the recall class vehicles when "in actual use." The sole object of the maintenance performed in the Olson program was to follow and observe Chrysler's service procedures, whereas maintenance performed "in actual use," as the record abundantly illustrates, is performed under entirely different circumstances. Maintenance in

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[93] I also agree with EPA that comparison of the "as received" results with the "after maintenance" results confirms that idle mixture misadjustment is in fact the primary cause of the carbon monoxide nonconformities in the recall class vehicles.

actual use is where all of the factors that have been previously identified as contributing to the cause of misadjustments will combine and represent the true state of maintenance being performed on the recall class vehicles. The sensitivity of the adjustment screws, the inconvenience involved in attaching the exhaust gas analyzer at the tap in front of the catalyst, the pressure to satisfy the customer, and the incentives to complete the task in an expeditious manner all interact in a way that is totally unlike the maintenance performed in the Olson program. The condition of the "as received" vehicles in the Olson program, on the other hand, reflects the state of maintenance of the vehicles while in actual use. They were obtained from owners whose vehicles were serviced, if at all, under conditions of actual use. Therefore, I conclude that the maintenance performed on the Olson program vehicles does not reflect the type of maintenance contemplated by section 207(c)(1) of the Clean Air Act.

Chrysler's second line of attack against the results of the Olson and Emission Factor programs consists of pointing out flaws in the sample selection procedures. Viewed as a whole these challenges are insubstantial and fail to shake my confidence in the conclusion that the samples are fairly representative of the entire recall class of vehicles. The small errors pointed to by Chrysler are really nothing more than minor deviations from the type of perfection one might expect in a textbook on sampling procedures, but not in the real world. Paraphrasing *Brown Shoe Company* v. *United States*, 370 U.S. 294, 341 n.69 (1962), the presiding officer noted that "while Chrysler may point to technical flaws in the compilation of the statistics, it must be recognized that in cases of this type precision in detail is less important than the accuracy of the broad picture presented. I believe that the picture as presented by EPA in this case

is adequate for making the determination required by Sec. 207(c)(1)...." [94]

The broad picture in this case includes all of the evidence in the record, not just the test results from the five test programs. Thus, even without benefit of these results, the record supports the conclusion that Chrysler should have reasonably foreseen that a substantial number of the in-use recall class vehicles, although properly maintained and used, would exceed the emission standard for carbon monoxide. The test results merely confirm what could be reasonably expected to occur. If the record consisted of nothing more than the test results, the technical flaws pointed out by Chrysler might be cause for some concern. However, even under those circumstances, the cause for concern would likely only manifest itself by a search for further evidence to clarify the areas of uncertainty. But such a search is unnecessary in this instance because the clarifying evidence is already in the record of this proceeding. Thus, when the totality of the evidence is examined, it is reasonable to conclude that the Olson and Emission Factor results are representative of the entire class of recall vehicles. As the presiding officer stated, "I cannot conceive of a sample of any kind which would not be subject to slight variances which were elicited by Chrysler on cross-examination of EPA witnesses and stated by Chrysler witnesses on direct testimony." [95]

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[94] Initial Decision at 58.

[95] One important observation must be made concerning Chrysler's contentions with respect to the validity of projecting sample results to the population of recall class vehicles. There is no evidence in the record which indicates that the sample vehicles are not in fact representative of the recall class. The flaws pointed out by Chrysler only allow speculation that the samples might not be representative in a purely statistical sense. For example, Chrysler points to the

fact there were a high number of non-respondents in the Olson program. In other words, of all the individuals contacted in order to obtain test vehicles, a large percentage did not respond. Expert opinion evidence was presented by Chrysler to the effect that a high non-response rate may reflect bias in the representativeness of the samples. That testimony does not however indicate the nature of the bias or how it would affect the results. In the absence of any evidence to the contrary, a high rate of nonresponse in this instance does not appear to be a matter for concern. If the purpose of taking the sample were to determine what percentage of a population held a particular opinion or some other view of a personal nature, there would be some basis for questioning the representativeness of the sample or at least for requiring EPA to present further evidence that the sample was not biased. In this case, however, the most important attribute which is obtained from the sample, and the one which would be most affected by any bias in the selection process, is the vehicle's level of carbon monoxide emissions. Another attribute is the state of maintenance of the vehicle. Thus, there does not appear to be any reasonable basis for believing that a high non-response rate would affect either of these attributes to the extent that the representativeness of the sample should be questioned. EPA has met its burden of proof in establishing the representativeness of the samples.

The other alleged flaw in the Olson program which Chrysler cites is that all of the vehicles in that program were selected from the Detroit area. Chrysler contends that such a sample cannot be regarded as representative of the recall class of vehicles. This potential shortcoming is offset, however, by independent evidence showing that there are no major regional differences in vehicle emissions. Initial Decision at 48. Moreover, the vehicles tested in the various programs in nine cities throughout the Nation all had similar rates of misadjustment. EPA Ex. B at 27, 28; EPA Exs. 1-5, 88. The only significant geographical differences in emissions appearing in the record were Denver and Los Angeles which have different emission environments than the rest of the Nation. These differences are readily explainable. Denver is at a higher altitude and therefore experiences higher emissions due to

Chrysler's principal criticism of the Emission Factors Program focuses on the procedures used in selecting the vehicles tested. In order to insure that the sample selected was random, EPA attempted to select vehicles from commercially available vehicle registration lists using the "n-th number" selection process. For example, every tenth name in the list of vehicle owners might be selected in order to obtain the desired number of test vehicles. But in order to satisfy the requirements for obtaining the requisite number of test vehicles, it was necessary for EPA to deviate from the n-th number procedure by media solicitations and, in a few cases, by parking lot searches or direct rentals. While this deviation from statistical techniques for assuring randomness was acknowledged by EPA as a potential source of bias, EPA's expert statistician saw no reason to believe that it would affect the nature of the sample, especially as it related to emissions.[96] Moreover, based upon a comparison of the results of the Olson Program with the Emission Factors Program results, the statistician could find no major discrepancies and concluded that statistical analyses of the two sets of data "reinforce" each other.[97] Therefore, since there were no major discrepancies between the results of the two programs, it is reasonable to conclude that deviation from the n-th number selection procedure did not bias the results of the Emission Factors Program.

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the lower oxygen content of the ambient air, whereas California has more stringent emission standards and therefore has lower emissions. No data from Denver or Los Angeles were relied upon in support of the recall order. Thus the lack of geographic diversity in the Olson program does not appear to materially affect generalizations about the entire recall class of vehicles based upon projections from the Olson program test results.

[96] EPA Ex. F at 17 (Singpurwalla).

[97] *Id.* at 9.

Aside from the results of the Olson and Emission Factors programs, EPA also presented the results of three other programs to support its contention that a substantial number of the recall class vehicles are exceeding the emission standard for carbon monoxide.[98] As previously indicated, the presiding officer did not use the results of these programs to make his determination that the "substantial number" criterion of Section 207(c)(1) had been satisfied. His rejection of these test results for purposes of the "substantial number" criterion was apparently based upon his conclusion that EPA had not established a "cut point" for purposes of correlating short-test results with the FTP. It will be recalled, however, that I did not adopt this conclusion because the record indicated that a cut point in the range of 1.5-2.0% idle CO reliably predicts an FTP failure.[99] Consequently, the short-test results should not have been automatically excluded from consideration in making the "substantial number" determination. This is a minor point, however, because the combined results of the Olson and Emission Factors Programs alone constitute substantial evidence that a "substantial number" of the recall class vehicles are exceeding the Federal standard for carbon monoxide emissions. The short-test results merely corroborate the conclusions reached on the basis of the Olson and Emission Factors Programs. As shown in the table appearing at page 34 of this decision, excessive carbon monoxide emissions in the recall class vehicles are occurring in high numbers throughout the United States. With the single exception of Trenton, one of the nine

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[98] EPA Exs. 3-5. The aggregate results of these programs are set forth in summary form in the tables appearing at page 34 [97a-98a] *supra*, together with the short-test results from the Olson and Emission Factors programs. Summaries of each individual program appear in the Initial Decision at 29-30.

[99] See discussion at page 31 [95a], *supra*.

locations shown in the table, a uniform pattern of excessive emissions is displayed. Hence, these results further confirm the conclusions reached on the basis of the Olson and Emission Factors Programs.

What Number Constitutes a "Substantial" Number. Chrysler raises the issue of whether the term "substantial number" refers to a "majority" of the recall class vehicles or to some lesser number. The significance of this issue is, of course, only important if the evidence relied upon to support recall shows that less than a majority of the recall class vehicles exceed the emission standard for carbon monoxide. As indicated earlier, based on the results of the Olson Program and the Emissions Factors Program, it was found that 93% of the 360 CID vehicles tested and 83% of the 400 CID vehicles tested exceeded the emission standard for carbon monoxide. From these results, it can be projected with 95% confidence that not less than 79% of all 360 CID vehicles and not less than 62% of all 400 CID vehicles are exceeding the standard in use. Thus, the results of these tests indicate that it is unnecessary to determine for purposes of this decision whether the phrase "substantial number" only refers to a majority or can also include some lesser number. However, I feel that the overall importance of the issue warrants some discussion even though it is not absolutely essential.[100]

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[100] Discussion of this issue may have some marginal importance in that Chrysler takes the position that the Olson results do not establish that a majority of the 400 CID vehicles are exceeding the emission standard. If only the Olson Program results are examined, it can be projected with 95% confidence that not less than 79% of all 360 CID vehicles and not less than 49% of all 400 CID vehicles are exceeding the standard. But under my interpretation of the phrase "substantial number," as discussed in the text immediately above, 49% indicates a systematic and pervasive emissions related problem and therefore constitutes a "substantial number" for purposes of section 207(c)(1).

The presiding officer adopted, and I also adopt, EPA's position that the phrase "substantial number" is not intended to represent any single number in all cases but rather is intended to represent a number which in the Administrator's judgment is sufficient to demonstrate the existence of an identifiable emissions related problem in a particular class or category of vehicles. The specific number, often expressed as a percentage of vehicles exceeding an emission standard, may vary from case to case depending upon the nature of the particular nonconformity being investigated. The primary consideration is whether the number is sufficient to demonstrate the existence of an "emissions related problem." An emissions related problem exists when the number of nonconforming vehicles, combined with reasonable engineering judgment, is sufficient to identify a systematic or pervasive problem in a particular class or category of vehicles.[101]

Chrysler contends that this interpretation of "substantial number" is incorrect. It takes the position that 50% or more of a class or category of vehicles must be found to have exceeded the emission standards to satisfy the "substantial number" criterion. As support for its position, Chrysler first argues that Congress took the so-called "average car" approach to recall.

The only support for Chrysler's "averaging" approach is a statement it took out of context from the Senate Public Works Committee Report on the 1970 amendments, where the Report states in discussing section 207 that ". . . compliance with national emissions standards for vehicles and engines is determined on the basis of whether the average of a class or model complies with the standards. Section 206 continues this procedure." [102]

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[101] Initial Decision at 26-27.

[102] 1 Leg. Hist. 429.

A more complete reading of that part of the Report reveals, however, that the reference to averaging was intended to refer to certification and production model testing under section 206, not to recall under section 207:

> Section 207 would represent a significant departure from prior provisions for control of vehicle emissions. At the present time compliance with national emission standards for vehicles and engines is determined on the basis of whether the average of a class or model complies with the standard. Section 206 continues this procedure. Under section 206 prototype models would be certified as to compliance with standards and production-line sample-testing would be authorized to assure that the average of the models coming off the production line conform to preproduction certification.
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> Under section 207, each production line vehicle would be required to comply with applicable emission standards. Each vehicle would be required to comply with standards for a 50,000 mile lifetime. The manufacturer would be required to warranty the performance of each individual vehicle as to compliance with emission standards. The dealer would not carry any obligation under this provision.
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> * * * *
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> The need to assure individual vehicle compliance became evident after sample-testing of vehicles on the road (both from California and nationally) revealed deterioration from conformance with the standard.

Moreover, the Conference Report specifically adopted the individual vehicle compliance standards of the Senate version of section 207 and just as specifically rejected the averaging approach contained in the Senate version of section 206. As stated in the Conference Committee Report,

> The Conference substitute adopts substantially the provisions of the House Bill relating to prototype and production line testing and the provisions of the Senate amendment relating to compliance after sale and warranty.[103]

These matters were all clearly set forth in the presiding officer's initial decision.[104] It is apparent, therefore, that there is no support whatsoever for Chrysler's "averaging" approach.

Alternatively, Chrysler contends that if the "averaging" approach is incorrect, it is unmistakable that a failure rate of no less than 40% must be demonstrated in order to meet these "substantial number" requirements. This alternative argument is based upon recently promulgated Selective Enforcement Auditing (SEA) regulations where EPA has required that 60% of vehicles tested at the factory conform to emissions standards, thereby permitting a failure rate of up to 40%. These arguments are without merit and seriously distort and misinterpret the statute and the SEA regulations.

The SEA regulations implement the assembly line test provisions of section 206 of the Act. With respect to these regulations it should be observed initially that they were promulgated in final form on July 20, 1976, and therefore were not applicable to production of the recall class vehicles. More importantly, the preamble to these regulations clearly states that they are ". . . intended to apply only to SEA and should not be construed as being applicable to other enforcement provisions established by the Clean Air Act." [105] In spite of these reasons for not finding the SEA regulations relevant to the "substantial number" issue, Chrysler insists that it is illogical

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[103] 1 Leg. Hist. 200.

[104] Initial Decision at 51-55.

[105] 41 F.R. at 31475-76.

to permit EPA to define "substantial number" as less than the 40% SEA standard. Chrysler argues that if the present 40% SEA regulation had been in effect at the time that the 1975 Chryslers at issue left the factory, they would have passed the SEA test, citing the "after maintenance" results of the Olson test where less than 40% of the vehicles tested failed to pass the emissions standard.[106] If, on the other hand, EPA's standard is adopted, Chrysler contends that these same Chrysler vehicles could be recalled several years after they have been in use based upon the same percentage of nonconformance which allowed them to pass through SEA scrutiny in the first place, resulting in economic waste. Indeed, Chrysler notes that a Congressional Oversight Committee in 1976 also felt that it would be illogical for EPA to impose a more stringent standard for recall than for SEA compliance.[107]

There are two serious flaws in Chrysler's argument. First, when the committee report is read in its entirety, it is apparent that it was not criticizing or arguing that a 40% or higher failure rate is required to support a recall under section 207 of the Act. Instead, it basically felt that the 40% standard under section 206 of the Act was too high, and was therefore expressing its views

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[106] As discussed *supra* at 45-47 [107a-109a], the "after maintenance" results of the Olson test are not relevant to the question of whether a "substantial number" of the recall class vehicles exceed the emission standard for carbon monoxide. Instead, the "as received" test results, which show that far more than 40% of the test vehicles exceed the standard, are the appropriate results for measuring whether or not a "substantial number" of the vehicles exceed the standard.

[107] Subcommittee on Oversight and Investigations of the House Committee on Interstate and Foreign Commerce, Report on Federal Regulations and Regulatory Reform, 94th Cong. 2nd Sess. 134 (Committee Print 1976).

that such a standard under section 206 might tie the Agency down to that standard under section 207. Second, neither Chrysler nor the committee seemed to appreciate the practical significance of using different standards under the two sections of the Act for purposes of enforcement. If vehicles fail the emission standards on the assembly line under the SEA 40% standard, the appropriate EPA enforcement action is to revoke the company's certification. This is a drastic measure since it means that further production of the vehicles must be halted until the cars are brought back into conformity and certification reissued. During the period of revocation, factory workers could be laid off and other economic dislocations of possibly major proportions might also occur. Enforcement of the recall provisions of the Act, on the other hand, has far less significant economic consequences. Production and sale of the vehicles are not prohibited, and the brunt of any direct adverse economic impacts is confined to the manufacturer. Its effects on labor would likely be positive, since the defects found in the recall class vehicles would have to be repaired. Thus, insofar as the agency requires a higher standard of conformity under the recall provisions of the Act than it does under certification provisions pursuant to the SEA regulations, the distinction is based upon economic and regulatory reality.[108]

E. *Miscellaneous Matters.*

Various other contentions and arguments were made by Chrysler in support of its position that the presiding officer's decision affirming the recall order should be overturned. Chief among these are its contentions that a decision affirming the recall order amounts to retroactive rule making and that the presiding officer erroneously concluded that Chrysler's dealerships are agents of

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[108] *Cf.* 41 *Federal Register* at 31474 (July 28, 1976).

Chrysler for purposes of Section 207(c)(1). Chrysler also asserts that there were errors in the evidentiary and discovery rulings of the presiding officer and that he failed to indicate evidence on which he relied to support his findings of fact. All of these contentions and arguments have been considered and rejected as being either without merit or as not being material for purposes of this decision.[109]

For instance, EPA argued that Chrysler is responsible for misadjustments caused by dealers during servicing. It is asserted that the dealers are the agents of the manufacturer due to the manufacturer's control over the method and manner of performing emissions related services. The presiding officer agreed with EPA. However, he noted that in view of his other conclusions, particularly his conclusion that Chrysler's liability for recall under section 207(c)(1) arises from defects in its emissions system design and service procedures, it was not essential to determine whether Chrysler dealers are agents of Chrysler.[110] Since I likewise find that Chrysler is responsible for the emission nonconformities due to its emission system design and service procedures and that it is responsible for the misadjustments whether performed by dealers or non-dealers, I find it unnecessary to decide this issue for purposes of this decision.

Chrysler asserts that the appropriate method for regulating vehicles with defective designs is through the promulgation of regulations which have prospective application, such as, the proposed parameter adjustment

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[109] Chrysler has also requested that this appeal be set down for oral argument because of the broad impact of the issues presented. That request is denied. This case has been extensively briefed before the presiding officer and myself. Therefore, further argument is unnecessary.

[110] Initial Decision at 70.

regulations (42 F.R. 56298) which will require that all vehicles, beginning with model year 1980, meet the emission standards even when misadjusted in order to obtain certification under section 206 of the Act, or through promulgation of anti-tampering regulations which prohibit manufacturers and dealers from removing or rendering inoperative any device or element of design installed in a motor vehicle. It is alleged, in other words, that the present recall order amounts to retroactive rulemaking. I disagree. The recall order is based on the fact that the defective design and service procedures *induced* misadjustments, not on the fact that the design merely *allowed* misadjustments. Moreover, while some of the misadjustments in this case may be considered "tampering," Chrysler's responsibility under section 207 (c) (1) of the Act is not thereby lessened for producing vehicles which encouraged it. The widespread nature of the nonconformities points to emissions problems which originated in the design of the vehicles.

Chrysler alleges that there were material errors in some of the presiding officer's evidentiary and discovery rulings which warrant reopening the hearing. The first such alleged error relates to Chrysler's assertion that it was improperly denied access to twenty documents whose relevance to the proceeding was not denied by EPA. The documents in question were found to be protected from disclosure by either the attorney/client privilege, work product doctrine, or executive privilege. I declined to accept an interlocutory appeal of the presiding officer's ruling, and I do not find any basis for reversing that ruling at this time. While there were indeed twenty documents subject to the ruling, in reality very little of their contents were not eventually disclosed to Chrysler. All relevant factual materials in the documents were disclosed to Chrysler by EPA, which the presiding officer was able to verify in an *in camera* review of the documents. With the exception of the sever-

able factual materials which were disclosed to Chrysler, the remainder of these documents consisted of matters that were subject to attorney/client privilege and the work product doctrine or consisted of intra-agency advisory opinions, recommendations and deliberations for which executive privilege is properly invoked. Chrysler was provided with adequate summary descriptions of the undisclosed materials, which the presiding officer was also able to verify in his *in camera* review. In spite of this, Chrysler was not able to establish any need for the materials which would warrant making an exception to otherwise protected materials.

Another alleged error concerns the refusal of the presiding officer to permit Chrysler to depose a certain high level EPA official concerning his knowledge of certification procedures. Such a refusal can not [sic] be considered prejudicial in light of the fact that another EPA official, (who was equally qualified in the subject area of certification) was made available to Chrysler. Chrysler made no showing that the latter official's deposition was not sufficient for any relevant or material purposes related to the effective presentation of its case.

Chrysler also asserts that it was prejudicial error for the presiding officer to admit and rely on (in his findings) the affidavits and questionnaires of Olson and Emission Factors owners. The short answer to this contention is that hearsay evidence is admissible in administrative proceedings and the presiding officer is in a position to judge its probative value.

Conclusion

For the reasons stated in this decision, I affirm the presiding officer's order requiring Chrysler to submit a plan in accordance with section 207(c)(1) of the Act for remedying the carbon monoxide nonconformities in the recall class vehicles. In addition to the narrative findings

and conclusions contained in this decision, I adopt the presiding officer's findings of fact, conclusions and reasons in support thereof to the extent they are consistent with this decision and also to the extent they are not specifically dealt with herein and are not inconsistent with this decision.

Since the attached recall order affects all vehicles of the recall class, I hereby specifically find, in accordance with section 307(b)(1) of the Clean Air Act, that the determinations made here are of nationwide scope or effect.

/s/ Douglas M. Costle
DOUGLAS M. COSTLE
Administrator

Dated: 20 Nov. 1978.

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY
BEFORE THE ADMINISTRATOR

CAA (207) Docket No. 1

In the Matter of

CHRYSLER CORPORATION

Respondent

ORDER

Findings having been made that a substantial number of vehicles in Chrysler's 1975 F-B2-C and F-LA2L-C, CII, and CIII engine families (comprised of vehicles equipped with 360 and 400 cubic inch displacement (CID) engines, 2 barrel carburetors and catalytic converters) do not conform to the 1975 Federal emission standard of 15 grams per vehicle mile for carbon monoxide (CO), (40 CFR 85.075-1(a)(ii)(b)), although properly maintained and used, when in actual use throughout their useful life, it is hereby ordered that Chrysler Corporation submit a plan for remedying the nonconformity to the Administrator in accordance with 40 CFR 85.1803 within 30 days from the date of this order.

/s/ Douglas M. Costle
DOUGLAS M. COSTLE
Administrator

Dated: 20 Nov. 1978.

[Certificate of Service Omitted in Printing]

APPENDIX C

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY BEFORE THE ADMINISTRATOR

CAA (207) Docket No. 1

In the Matter of

CHRYSLER CORPORATION,
Respondent.

INITIAL DECISION

Pursuant to Sec. 207(c)(1) of the Clean Air Act, as amended, the Administrator of the United States Environmental Protection Agency by letter dated December 8, 1976, EPA 141, ordered Chrysler to recall all 1975 vehicles with 360 cubic inch displacement (CID) 2 barrel and 400 CID 2 barrel engines (hereinafter "recall class"). The Administrator's order alleged that a substantial number of vehicles of the recall class do not conform to the Federal emission standard of 15 grams/mile for carbon monoxide (CO), although properly maintained and used, when in actual use throughout their useful life and further alleged that the primary cause of the nonconformity is carburetor idle mixture misadjustment. In addition, the order alleged that misadjustments are routinely performed by Chrysler dealerships, and occur, in general as a result of Chrysler's carburetor design and specified adjustment procedures. The order alleged that Chrysler should be responsible for the nonconformity because Chrysler should have foreseen that its carburetor design and adjustment procedures would cause widespread misadjustments and because of the agency relationship which exists between Chrysler and Chrysler's authorized dealerships.

Chrysler contested the Administrator's recall order by letter to the Administrator dated January 19, 1977 and requested an administrative hearing pursuant to Sec. 207(c)(1) and regulations issued thereunder (40 CFR 85.1807). Chrysler did not contest the fact that it is a manufacturer of motor vehicles subject to the Clean Air Act, that it manufactured and introduced into commerce the vehicles subject to the Administrator's December 8, 1976 order, or that the vehicles subject to the order comprised a class or category of vehicles.

In accordance with EPA's hearing regulations (40 CFR 85.1807) an Administrative Law Judge was designated to preside at the hearing. A Federal Register Notice announcing the public hearing was published on February 8, 1977 (42 FR 7983). No petitions for intervention were filed and therefore EPA and Chrysler are the only parties to this proceeding.

Prehearing Conferences were held on March 31, 1977, April 21, 1977, May 10, 1977, and July 15, 1977. The hearing commenced on September 19, 1977 and terminated with close of evidence on November 10, 1977.

A. *Relevant Statutory Provisions*

The instant case represents the first emissions recall to be contested by an automotive manufacturer and thus also presents the first occasion for interpretation and application of the statutory language of Sec. 207(c)(1) of the Clean Air Act which provides:

> "*If the Administrator determines that a substantial number of any class or category of vehicles or engines, although properly maintained and used, do not conform to the regulations . . . when in actual use throughout their useful life . . .*, he shall immediately notify the manufacturer thereof of such nonconformity, and he shall require the manufacturer to submit a plan for remedying the nonconformity of

the vehicles or engines with respect to which such notification is given. . . [42 U.S.C. 1857f-5a(c)(1)(1970).]" (emphasis added)

Subsection (3) of the same section provides:

> *"The manufacturer shall furnish with each new motor vehicle or motor vehicle engine such written instructions for the maintenance and use of the vehicle or engine by the ultimate purchaser as may be reasonable and necessary to assure the proper functioning of emission control devices and systems.* In addition, the manufacturer shall indicate by means of a label or tag permanently affixed to such vehicle or engine . . . such other information . . . as the Administrator shall prescribe by regulation. [42 U.S.C. 1857f-5a(c)(3) (1970) (emphasis added)]"

B. *The Principal Issues*

The principal issues in this litigation are:

1. Were the data vehicles which served as the basis for the Administrator's recall order "properly maintained" within the meaning of that term in Sec. 207(c)(1);
2. Were Chrysler's maintenance instructions to the ultimate purchaser reasonable and necessary to assure the proper functioning of emission control devices and systems; and
3. Assuming the data vehicles were properly maintained, is there sufficient evidence to support the Administrator's determination that there are a "substantial number" of vehicles of the recall class that "do not conform" to the applicable standard.

A decision on these basic issues is necessary to determine the outcome of this proceeding. Issue 2 above is not in issue since all parties agree that the maintenance instructions provided to the ultimate purchaser are rea-

sonable and necessary to assure the proper functioning of emission control devices and systems.

EPA maintains that while the three basic issues raised are "properly maintained," "substantial number" and "do not conform", there are other issues which impact on any determination of these issues as expressed to some degree in the recall letter of December 8, 1976.

EPA alleges that one of the main causes of Federal Test Procedure nonconformities, as they relate to the issue of "properly maintained," is misadjustment of the carburetor at any one of the following stages:

1. During carburetor assembly and calibration.
2. At Chrysler new car preparation centers.
3. At Chrysler dealerships, prior to delivery to owner.
4. At Chrysler dealerships after sale to owner due to complaints to mechanics concerning driveability problems. Mechanics are alleged to misadjust the idle mixture in order to obtain customer satisfaction.
5. EPA further alleges that another cause of nonconformity is a "defect in design" of the idle mixture system by failing to effectively limit the idle CO adjustment range by internal or external limitations and the use of air pumps. And further that idle CO adjustment to vehicle response was too sensitive and unstable.
6. And finally, due to all of the above, Chrysler should have foreseen that misadjustments would result and reasonable and available measures should have been taken to reduce the likelihood of misadjustments or to mitigate the impact thereof.
7. And that an agency relationship exists between Chrysler and its dealerships based upon the theory

of "right to control" repair and service procedures of emission systems.

As stated in the recall order, EPA alleges that there is a nonconformity in certain 1975 model Chrysler vehicles which is caused by carburetor idle misadjustment. According to Mr. Harris, a Chrysler engineer, a portion (50%) of the fuel/air mixture reaching the carburetor at idle is metered through two idle ports. The actual metering of the mixture is controlled by two screws which are accessible to the mechanic on the body of the carburetor ("idle mixture screws"). The adjustment of these screws determines the richness of the idle mixture of fuel and air.

Therefore, in order for this court to order a recall, some or all of the items above, 1-6, must be found to be the cause of the misadjustment.

It is necessary then to first address the basic issues:

1. properly maintained and used,
2. substantial number, and
3. do not conform.

C. *Discussion and Conclusions of Law.*
Properly Maintained and Used

The threshold issue to be confronted is what did Congress mean by the term "although properly maintained and used" in Sec. 207(c)(1) of the 1970 Clean Air Act Amendments. The statute and the legislative history seem to point to the definition contained in Sec. 207(c)(3) that the vehicle is properly maintained if it is maintained in accordance with the manufacturer's "written instructions for the maintenance and use of the vehicle or engine by the ultimate purchaser."

EPA maintains that the following issues are presented:

a. Whether the "properly maintained" criterion of Sec. 207(c)(1) is satisfied with respect to a given vehicle if it is brought in good faith to a bona fide service establishment for the performance of relevant service and maintenance operations, at the time or mileage intervals specified by the manufacturer in the Owners Manual, *EPA 7*, regardless of whether the sought after maintenance is performed or not.

b. Whether the "properly maintained" criterion of Sec. 207(c)(1) is satisfied with respect to a given vehicle if its mileage has not reached a relevant [1] maintenance interval for the emission system (15,000 miles) and no service therefore accomplished.

c. Whether the "properly used" criterion of Sec. 207(c)(1) is satisfied with respect to a given vehicle if it has been operated in accordance with the relevant use instructions provided by the manufacturer in the Owners Manual.

d. Whether a manufacturer can, as an affirmative defense, avoid liability for the reasonably foreseeable incorrect performance of maintenance operations.

It is clear that the phrase "properly maintained and used" contained in Sec. 207(c)(1) is synonymous with the statement in Sec. 207(b)(2)(A) that a vehicle be "maintained and operated in accordance with instructions under subsection (c)(3)."

Sec. 207(a) and (b) contains two major *warranty* provisions. Sec. 207(a) requires the manufacturer to warrant that each vehicle is free from defects in materials and workmanship which cause such vehicle to exceed applicable emission standards during its useful

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[1] Relevant service is considered to be that service and maintenance at the times and mileages specified in the Owners Manual.

life. Sec. 207(b) requires the manufacturer to warrant that if a given vehicle does not conform to applicable emission standards at any time during its useful life, then the manufacturer will remedy such nonconformity at his own expense. The Sec. 207(b) warranty also includes certain preconditions to the manufacturer's obligation. The Sec. 207(a) warranty is referred to as the "defects warranty," and the Sec. 207(b) warranty is referred to as the "performance warranty." Regulations required in order for the performance warranty to come into being are currently in the proposed rulemaking stage. *See* 42 FR 26742, 26759 (1977).

Chrysler contends that the requirements for "proper maintenance" for recall purposes should not be any less than the requirements for warranty purposes and that the burden of proof in the proposed rules for warranty should be the same as for recall purposes.

EPA argues that this recall case should not be required to conform to the same standard of proof as that specified for an individual warranty claim in the proposed regulations due to the fact that such proposed standard of proof, before the regulations become effective, requires the following actions to be taken by EPA—none of which have been accomplished:

1. Detailed requirements for "all" dealers, etc., are required.
2. Performance warranty regulations are required.
3. Requirements for standard of proof are needed.
4. The new warranty regulations will be prospective. They would require, among other things, devising a log book for the owner's use.

However, EPA also argues that their position with regard to the responsibility of the *manufacturer* in this proceeding is the same as that contained in the proposed

warranty regulations, including the assertion of affirmative defenses due to incorrect maintenance, foreseeability of the problem and the agency relationship which exists between Chrysler and its dealers, all of which will be dealt with later.

EPA's burden of proof extends to a showing that a class of vehicles or engine families are exceeding the standard of emission for that class.

The Clean Air Act sets forth three primary pollutants for which Federal emission standards were to be established and enforced. These pollutants are hydrocarbons (HC), carbon monoxide (CO) and oxides of nitrogen (NOx). The standards for HC, CO, and NOx emissions for the *exhaust* of a vehicle were actually set by Congress. These are known as *exhaust* emission standards. Congress also mandated EPA to designate a test procedure to measure the exhaust emission standards. EPA established a test procedure known as the *Federal Test Procedure* (FTP). 40 CFR 85.075-9 through 27. Exhaust pollutants (HC, CO, and NOx) are the products of combustion in the engine of a vehicle while the vehicle is in operation.

Due to the inconsistencies of human nature in following explicit instructions for the care of their possessions, including automobiles, it would be almost impossible for EPA, as a third party, to be certain in each recall case that it has before it, all of the identical information, by documentation, that would be required by the manufacturer for an owner to claim warranty services. The owner of each specific vehicle should and will under the proposed regulations be held to a high degree of proof or standard of record maintenance to effect the provisions of his warranty. The manufacturer has the same affirmative defenses against the owner as it does against the EPA. The difference should be, in my opinion, the de-

gree of proof required of the owner as opposed to the degree of proof required of EPA.

The applicable warranty provisions in the instant matter are the provisions of the 1970 Amendments.

One important similarity between the performance warranty and recall provisions of Sec. 207(c)(1) is the concept of "properly maintained and used." According to the language of the recall provision, Sec. 207(c)(1) of the Act, the Administrator's determination that a substantial number of vehicles do not meet applicable emission standards must relate to vehicles which are "properly maintained and used." Similarly, the performance warranty of Sec. 207(b) requires that in order for the warranty to run to a particular owner, the owner's vehicle must be "maintained and operated in accordance with instructions under subsection (c)(3)." Sec. 207(c)(3) provides in pertinent part that, "The manufacturer shall furnish with each new motor vehicle. . . such written instructions for the maintenance and use of the vehicle . . . by the ultimate purchaser as may be reasonable and necessary to assure the proper functioning of emission control devices and systems."

At the outset it should be noted that in order to determine the meaning of "properly maintained and used" under Sec. 207(c)(1), it is necessary to examine the legislative history surrounding the 1970 Amendments.

Both EPA and Chrysler agree that although the recall and performance warranty provisions use different language to express the concept of "properly maintained and used," it is clear from the legislative history that these phrases were intended to be synonymous.

As can thus be seen, "properly maintained and used" is a concept which relates directly to the instructions required to be furnished to the ultimate purchaser under Sec. 207(c)(3) of the Act.

EPA alleges that since the instructions required by Sec. 207(c)(3) are directed specifically to the ultimate purchaser, it is the actions of the vehicle owner only in attempting to follow these instructions which form the basis for determining whether the vehicle has been properly maintained and used regardless of whether actual maintenance was performed. I cannot agree. The "properly maintained" provisions relate solely to the condition of the vehicle and not simply to the actions of the vehicle owner in seeking maintenance at the proper intervals. "Properly used" is another matter. The vehicle owner is solely responsible for the uses to which the vehicle is put.

Based upon the discussion herein, I find that the phrase "properly maintained" has a technical meaning within the automobile industry and, when used within that industry, means "maintained in accordance with the manufacturer's [instructions or] specifications." However, for purposes of a Sec. 207(c)(1) recall action, "properly maintained and used" means that EPA, a third party to the maintenance of the vehicle, need only show by documentation or other relevant evidence, substantial compliance with the manufacturer's instructions. EPA cannot be held to the same degree of proof for recall purposes as an owner seeking warranty coverage. The definition of proper maintenance within the industry also includes the correction of unscheduled maintenance problems such as driveability, hesitation, dieseling, etc., for which specified time intervals or procedures are not set forth either in the Owner's Manual or service manual.

It is true that it was recognized by Congress that there was a need for vehicle owners to follow the manufacturer's reasonable maintenance instructions in order to assure that vehicles would continue to meet emission standards throughout their useful life. As stated by Senator Muskie during the Senate debate on the war-

ranty provisions of S.4358 (the Senate bill whose warranty and recall provisions were substantially adopted in the 1970 Amendments),

> "We understand, of course, that performance depends at present as well upon the extent to which the operator maintains his car. We have said in the report, and made it clear in the language of the bill, indeed, that unless the individual operator meets the manufacturer's instructions with respect to maintaining the car as it relates to the clean air provisions of the automobile, the warranty will not be available to the owner. That is the language of the bill. . . .
>
> . . . .
>
> "We understand that it is not presently possible to build a maintenance-proof, clean car, but that it is possible—with the use of a system that is built with some durability in it and some responsibility imposed upon the operator—to assure reasonably clean operation of such an automobile. We have to have the two. One without the other is like a one-legged man."

116 Cong. Rec. 33094-95 (1970), 1 Leg. Hist. at 332. (*A Legislative History of the Clean Air Act Amendments of 1970.*) By writing the "properly maintained and used" concept into the Act, EPA alleges that Congress was placing responsibility on the vehicle owner to follow the instructions furnished by the manufacturer under section 207(c)(3). This is correct, but it is clear that this requirement upon the vehicle owner was only a prerequisite to the proper maintenance of the vehicle.

The action of the vehicle owner in bringing the vehicle to a service organization is certainly the key as to whether a given vehicle is properly maintained and used, but it is the actual maintenance performed on the vehicle which is the determining factor.

It is true that the EPA interpretation of "properly maintained and used" is entitled to substantial weight.

But here there is no indication in the record or otherwise of an interpretation of this phrase prior to this proceeding. EPA's interpretation, therefore, I find, is contrary to the ordinary meaning placed upon it both by the industry and the "reasonable man" theory.

EPA's position that a vehicle is "properly maintained" if it is brought in good faith to a bona fide service establishment for the performance of relevant service and maintenance operations, at the time or mileage intervals specified by the manufacturer, regardless of whether relevant maintenance is performed, must be rejected for the above reasons.

EPA also contends that if any of the vehicles tested had not attained a mileage which would require maintenance in accordance with the owners manual, such as oil change (5,000 miles) or idle mixture adjustment (15,000 miles), no maintenance history would be required to classify these vehicles as "properly maintained." I agree.

This theory necessitates a review of the appropriate instructions contained in the owner's manual:

> "REQUIRED MAINTENANCE—
> EMISSION CONTROL SYSTEM
>
> The required maintenance services listed on the following pages must be performed at the times or mileages specified to assure the continued proper functioning of the emission control system. These, and all other recommended maintenance services included in this manual should be performed to provide best vehicle performance and reliability. More frequent maintenance may be needed for vehicles in severe operating conditions such as dusty areas and very short trip driving.
>
> "Inspection and service should also be performed anytime a malfunction is suspected.

"EMISSION CONTROL SYSTEMS WARRANTY

Chrysler Corporation warrants that this vehicle is designed, built, and equipped so as to conform at time of sale with applicable regulations issued under the National Emission Standards Act, as amended, and contained no defects in material and workmanship which would cause it to fail to conform with such regulations for five years or 50,000 miles, whichever occurs first, if maintained and used by the owner in accordance with written instructions issued by Chrysler to assure proper functioning of emission control devices and systems on the vehicle.

"Any part of the emission control system of this vehicle found defective under the conditions of this warranty will be repaired or replaced, at Chrysler's option, without charge at an authorized Chrysler-Plymouth or Dodge dealership.

"To obtain this service the owner must submit written receipts or other adequate evidence for services obtained that will verify the vehicle has been maintained according to the written instructions issued by Chrysler to assure proper functioning of emission control devices and systems on the vehicle.

REQUIRED MAINTENANCE SERVICES FOR EMISSION CONTROL AND PROPER VEHICLE PERFORMANCE	MILEAGE INTERVALS MILEAGE IN THOUSANDS	5	10	15	20	25	30	35	40	45	50
ENGINE IDLE SPEED & FAST IDLE SPEED	CHECK & RESET AS NECESSARY AT INITIAL 5,000 MILES										
ENGINE OIL	CHANGE EVERY SIX MONTHS	OR	●	●	●	●	●	●	●	●	●
ENGINE OIL FILTER	REPLACE AT INITIAL OIL CHANGE AND EVERY 2ND OIL CHANGE THEREAFTER										
ENG. COMPRTMT. RUB. & PLSTC. COMPNTS.	INSPECT EVERY SIX MONTHS	OR	●	●	●	●	●	●	●	●	●
CARBURETOR CHOKE SHAFT	APPLY SOLVENT	EVERY SIX MONTHS									
FAST IDLE CAM & PIVOT PIN	APPLY SOLVENT	EVERY SIX MONTHS									
COOLING SYSTEM	CHECK AND SERVICE AS REQUIRED	EVERY SIX MONTHS									
CRANKCASE INLET AIR CLEANER	CLEAN EVERY 12 MONTHS OR	AT	●			●			●		
MANIFOLD HEAT CONTROL VALVE	APPLY SOLVENT	AT	●			●			●		
AIR PUMP BELT (IF SO EQUIPPED)	CHECK CONDITION AND TENSION	AT	●			●			●		
IGNITION, TIMING, IDLE SPEED, IDLE MIXTURE	CHECK AND ADJUST AS REQUIRED	AT	●						●		
CARBURETOR AIR FILTER	CLEAN	AT				●					
CARBURETOR AIR FILTER	REPLACE	AT	●						●		
POSITIVE CRANKCASE VENT VALVE	CHECK OPERATION	AT				●					
POSITIVE CRANKCASE VENT VALVE	REPLACE	AT	●			●			●		
VAPOR STORAGE CANISTER FILTER ELEMENT	REPLACE	AT	●			●			●		
EXHAUST GAS RECIRCULATION SYSTEM	CHECK OPERATION	AT	●			●			●		
SPARK PLUGS (LEADED GAS)	REPLACE	AT				●					
SPARK PLUGS (WITH CAT. UNLEADED GAS)	REPLACE	AT	●			●			●		
IGNITION CABLES, DIST. CAP & ROTOR	CHECK AND REPLACE AS REQUIRED	AT	●			●			●		
ORIFICE SPARK ADVANCE CONTROL VALVE	CHECK OPERATION	AT	●			●			●		
AUTOMATIC CHOKE	CHECK AND ADJUST AS REQUIRED	AT	●			●			●		
CATALYST OVER TEMP. PROTECTION SYSTEM	CHECK AND REPLACE AS REQUIRED	AT	●			●			●		
FUEL FILTER	REPLACE	AT	●			●			●		

Inspection and service should also be performed anytime a malfunction is observed or suspected. Retain receipts for all vehicle emission services to protect your emission warranty.

Owner's Manual, EPA-7, pp. 34 and 35.

From the above, it is clear that the only maintenance required of the owner's new vehicle at 5,000 miles is a change in engine oil and to check and reset as necessary at 5,000 miles the engine idle speed and fast idle speed. EPA contends that even if this were not done at 5,000 miles, such an omission would not affect whether the vehicle was "properly maintained" with regard to the idle mixture.

The critical or relevant "proper maintenance" as EPA contends is the idle mixture adjustment at 15,000 miles. I agree.

EPA further maintains that the idle mixture adjustment is checked by Chrysler:

1. Before the vehicle leaves the assembly plant.
2. At the New Car Prep Center, if utilized.
3. At the Chrysler dealership before delivery to purchaser.

And, therefore, the idle mixture should be properly adjusted upon delivery of the new vehicle to the owner and, in accordance with the Owner's Manual, should not require adjustment to remain in conformance with the emission standard until the vehicle has been driven 15,000 miles.

The only exception to this would be if a malfunction is observed or suspected, at which time the Owner's Manual instructs the owner to have the vehicle inspected and serviced and to "Retain receipts for all vehicle emission services to protect your emission warranty."

The vehicles tested in the Portland, Oregon, State Inspection Maintenance Program numbered 19 of the 360 CID engine, with an average mileage of 3,091 and an average idle CO of 1.9%; 7 vehicles of the 400 CID

engine, with an average mileage of 4,961 and an average idle CO of 2.2%.[2]

The vehicles tested in the MSED New Car Survey, Washington, D.C., numbered 11 of the 360 CID engine, with an average mileage of 5,158 and an average idle CO of 2.9%; and 7 vehicles of the 400 CID engine, with an average mileage of 4,272 and an average idle CO of 2.0%.

The vehicles tested in the Cincinnati, Ohio, State Inspection Maintenance Program numbered 15 of the 360 CID engine, 2-barrel with an average mileage of 2,665 and an average idle CO of 2.4%, and 2 vehicles of the 400 CID engine, with an average mileage of 629 and an idle CO of 0.6%.

Based upon these programs, I agree with EPA that the results of idle tests in State I/M programs taken early in the 1975 model year on low mileage vehicles, demonstrates gross conditions of idle misadjustment on the samples of recall class vehicles tested in those programs and that those that had not reached any relevant maintenance interval may be considered to have been properly maintained. As to whether or not these vehicles may be included as "data vehicles" to support the "substantial number" criterion will be discussed later.

EPA's argument of gross conditions of idle misadjustment even prior to delivery to purchasers is bolstered by the following situations.

Carburetors are set during carburetor assembly and no adjustments are to be made after installation of the carburetor on a vehicle until new car preparation adjustments are performed by dealers or prep centers. According to Chrysler, no adjustments are made by

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[2] All parties agreed that an idle CO of this magnitude (2.0% or above) would correlate to a failure of the FTP.

Chrysler on the vehicle assembly lines. In order to determine the condition of the idle mixture adjustment for vehicles at the end of the assembly line, data submitted to EPA by Chrysler were analyzed. *EPA-16*. The data consisted of idle CO measurements of production vehicles that were tested as part of Chrysler's assembly line audit program. Idle CO measurements were made for new vehicles as they were received from the assembly line. The data show that only 54% of the 360 CID vehicles and 73% of the 400 CID vehicles were within Chrysler's specified idle CO adjustment range as the vehicles left the assembly lines for shipment to dealers or new car prep centers. Twenty-seven percent of the 360's and 17% of the 400's were adjusted to idle CO levels in excess of 1.0%. The results of these tests are summarized below:

Engine	Number Tested	Average* Idle CO	Percent Misadjusted	Percent** Exceeding 1.0%
360	67	0.8%	46%	27%
400	78	0.5%	27%	17%

These results indicate that a significant percentage of recall class vehicles were not properly adjusted as they left Chrysler assembly plants.

The next scheduled adjustment point is in new car preparation at dealerships or new car prep centers. Chrysler also conducted tests at a Chicago new car prep center. According to results submitted by Chrysler to EPA, *EPA-17*, the data showed that 29% of the 86 recall class vehicles tested were not within the idle CO

* Readings for recall class vehicles are taken at a tap in the exhaust system between the engine and the catalyst as opposed to a tailpipe reading for non-catalyst vehicles.

** There is evidence in the record which indicates, as contended by EPA, that idle CO which exceeds 1.0% will indicate that the vehicle will also exceed Chrysler's specifications.

specification and 23% exceeded a level of 1.0%. The results of these tests are summarized below:

Engine	Number Tested	Average* Idle CO	Percent Misadjusted	Percent Exceeding 1.0%
360	48	0.7%	33%	27%
400	38	0.5%	18%	18%

Data were also submitted by Chrysler from tests of various 1975 and 1976 vehicles at five Chrysler dealerships. These vehicles had not yet been delivered to purchasers. According to the results submitted to EPA by Chrysler, *EPA-18*, of the 29 recall class vehicles tested, 28% exceeded 1.0% idle CO levels, indicating that a significant percentage of vehicles are out of adjustment at this stage prior to delivery to owners. The results of these tests are summarized below:

Engine	Number Tested	Average** Idle CO	Percent Misadjusted	Percent Exceeding 1.0%
360	14	0.5%	29%	29%
400	15	0.5%	33%	27%

To determine what the idle CO levels of recall class vehicles are after delivery of the vehicles to purchasers, EPA obtained a list of recently purchased vehicles from Chrysler in September 1975. The list consisted of vehicles delivered to owners within the previous three months in the Washington, D.C. area. A total of eighteen recall class vehicles were tested using the idle test. With regard to maintenance, owners of eight of the eighteen vehicles indicated that no engine or carburetor maintenance work had been performed on the vehicle prior to the date of the test. These eight vehicles were therefore in the condition in which owners received them from

* Readings taken at catalyst tap.

** Readings taken in tailpipe.

the dealer with respect to the idle mixture adjustment. Seven of the eight vehicles were misadjusted, indicating that a high percentage of vehicles are out of adjustment at the time of initial delivery to the owners.

Of the other ten owners, two stated that they had the 5,000 mile scheduled maintenance performed on their vehicle. This maintenance consists of an oil change and an idle speed adjustment, but no adjustments of the idle mixture. Therefore, with regard to idle mixture adjustment these two vehicles were also tested in the condition as sold to the owner. Both of these vehicles were misadjusted. The other eight were returned to dealers for warranty work and four of these vehicles were misadjusted. The following table summarizes these test results:

	No. Tested	Average Idle CO	Percent Misadjusted
No maintenance affecting idle mixture prior to test	10	3.2%	90%
Warranty work prior to test	8	1.8%	50%

These results show that a high percentage of vehicles are misadjusted prior to sale to the owners and that vehicles returned only to dealers for warranty work also showed a high rate of misadjustment.

All of the data cited above indicate that a significant percentage of vehicles are out of adjustment prior to delivery of the vehicles to the owners. In addition, Chrysler carburetor warranty repair records indicate that 144,891 warranty claims were submitted with respect to the carburetor, indicating that a large percentage of vehicles were returned during warranty period (12 months/12,000 miles) for repairs. Of the 46 vehicles tested in the Emission Factor and Olson programs,[3] 36

[3] These programs will be discussed later.

had idle CO levels that were not within Chrysler's specification. Owner statements and records submitted by Chrysler indicate that owners of 9 of the 36 misadjusted vehicles had not had any maintenance that would affect the idle mixture performed on their vehicles prior to the emission test. This would indicate that either these vehicles were misadjusted during new car preparation by the dealer or Chrysler prep center or the misadjustment occurred during assembly and was not corrected prior to delivery to the purchaser. The other 27 vehicles had been returned by owners for maintenance relating to the carburetor or to engine tune-up. This work was done exclusively by Chrysler dealers for 25 of the 27 vehicles. Again, either the misadjustment occurred during the maintenance or previously during assembly or new car preparation. Considering all 36 of the misadjusted vehicles, 34 (or 94%) of the vehicles were misadjusted either during assembly or by Chrysler dealers in new car preparation or maintenance.

In summary, idle mixture misadjustments, which have been identified by both Chrysler and EPA as the cause of the nonconformity of recall class vehicles, are occurring to some degree on the assembly line and to a much greater extent in Chrysler dealerships. Misadjustments are prevalent on brand new low mileage vehicles of the recall class and as the vehicles accumulate mileage the misadjustments occur more frequently and the severity of these misadjustments increases. This is illustrated in the following table which presents the idle CO data for recall class cars at different mileage intervals.

Mileage	Number of Vehicles	Average Idle CO	Percent Misadjusted	Percent Above 1.0%
0-1,000	17	1.9%	65%	65%
1,000-5,000	37	2.2	73	68
5,000-10,000	25	2.9	72	72
10,000-15,000	20	3.1	75	75
above 15,000	10	4.3	90	90

By looking at all of the in-use idle emissions data available to EPA, *EPA 1-5*, it can also be seen that the misadjustment is uniformly prevalent throughout the country. This is illustrated in the following table which presents idle CO data for recall class vehicles at different geographic locations.

Idle Test Data Summary

Test Site	Number Tested	Average Mileage	Average Idle CO	Percent Over 1.0%
Portland, Oregon	26	3,594	2.0%	69%
Washington, D.C.	19	5,284	2.4%	68%
Cincinnati, Ohio	17	2,410	2.2%	65%
Chicago, Illinois	15	4,208	2.6%	67%
Trenton, New Jersey	5	—	0.8%	20%
St. Louis, Missouri	7	7,700	3.3%	
Phoenix, Arizona	3	20,980	3.2%	100%
Houston, Texas	8	8,760	4.3%	88%
Detroit, Michigan	20	15,495	3.2%	75%

Chrysler contends that low mileage (prior to any period of scheduled maintenance[4]) does not equate to "proper maintenance" and furthermore does not indicate in any way how the vehicle has been maintained. Chrysler cites the fact that ten vehicles in the Olson Program had unscheduled maintenance[5] under 15,000 miles. Four vehicles with mileage over 15,000 miles when tested, had unscheduled maintenance prior to reaching 15,000 miles and 20 of the Emission Factors Program

[4] "Scheduled maintenance" means any adjustment, repair, removal, disassembly, cleaning, or replacement of vehicle components or systems which is performed on a periodic basis to prevent part failure or vehicle malfunction.

[5] "Unscheduled maintenance" means any adjustment, repair, removal, disassembly, cleaning, or replacement of vehicle components or systems which is performed to correct a part failure or vehicle malfunction.

vehicles had unscheduled maintenance prior to 15,000 miles.

Chrysler asserts that such unscheduled maintenance may have been incorrect maintenance causing the nonconformity and cites the fact that 9 of the 10 360 CID vehicles in the Olson Program and 4 of the 10 400s had damaged or missing limiter caps.[6] The fact that these vehicles had damaged or missing limiter caps indicates to the court that the unscheduled maintenance involved adjustment of the idle/mixture screws based upon a complaint by the vehicle owner of driveability problems.

While the unscheduled maintenance may have been incorrect maintenance, Chrysler has not shown by any affirmative evidence that this fact is true. It would seem that in order to satisfy the customer it was the only maintenance under the circumstances when carburetor design, etc., are considered.

I find that for purposes of meeting the "properly maintained" criterion of Sec. 207(c)(1) a vehicle has been properly maintained in accordance with the Owner's Manual maintenance instructions, as far as the emission system is concerned, when the vehicle has not reached 15,000 miles and has not otherwise been returned for any relevant or scheduled service to such emission system.

EPA further alleges that a vehicle is properly used if it is operated in accordance with the relevant use instructions furnished by the manufacturer. I agree.

In addition to requiring a manufacturer to provide maintenance instructions, Sec. 207(c)(3) requires a manufacturer to "furnish with each new motor vehicle

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[6] Limiter Cap—A plastic cap covering the idle-mixture screws intended to limit the number of turns of the screw in either direction.

. . . such written instructions for the . . . use of the vehicle . . . by the ultimate purchaser as may be reasonable and necessary to assure the proper functioning of emission control devices and systems." As with the owner's obligation concerning "properly maintained," the responsibility of the owner to properly use his vehicle is based upon these instructions. The nature of the owner's proper use obligation differs, however, from that of proper maintenance due to the differing degrees of control an owner can reasonably be expected to exercise in these two areas. In the area of vehicle use, for example, the owner can realistically be expected to exercise control over the manner in which the vehicle is actually used and operated.

The starting point for the owner's "properly used" obligation is the written instructions furnished by the manufacturer under Sec. 207(c)(3). Any use instructions provided by Chrysler would be found in the Operator's Manual, similar to maintenance instructions.

Based upon the burden that can realistically be placed upon the owner, EPA submits that a vehicle should be considered to have been properly used if the owner has operated the vehicle in accordance with the relevant use instructions furnished by the manufacturer.

Since there has been no affirmative showing by Chrysler related to misuse by the vehicle owners which represent data upon which EPA has relied, I find that this is not in issue in this proceeding.

Substantial Number

It is EPA's position that the phrase "substantial number" is not intended to represent any single number in all cases, but rather is intended to represent a number which in the Administrator's judgment is sufficient to demonstrate the existence of an identifiable emissions related problem in a particular class or category of

vehicles. The specific number, often expressed as a percentage of vehicles exceeding an emission standard, may vary from case to case depending upon the nature of the particular nonconformity being investigated. The primary consideration is whether the number is sufficient to demonstrate the existence of an "emissions related problem." An emissions related problem exists when the number of nonconforming vehicles, combined with reasonable engineering judgment, is sufficient to identify a systematic or pervasive problem in a particular class or category of vehicles. In such case EPA contends the "substantial number" requirement has been satisfied. The Administrator's determination must be based upon testing, studies, or investigations conducted on a statistically representative sample of vehicles. This sample must be sufficient to support a statistical projection to the entire class or category of vehicles.

EPA contends that while "substantial number" is not defined in the Act, the *Legislative History of the Clean Air Act Amendments of 1970* does provide some indication of the intended meaning of that phrase. As part of the Senate consideration of the Conference Committee Report, Senator Muskie included in the record a "Summary of the Provisions of Conference Agreement on the Clean Air Amendments of 1970." *See* 116 Cong. Rec. 42384 (1970), *reprinted in* A Legislative History of the Clean Air Amendments of 1970 (2 volumes), Ser. No. 93-18, at pp. 130-31 (hereinafter "Leg. Hist."). In referring to the recall provision the Summary explained that, "The Administrator can test cars on the road, and can require recall if a representative sample fails the test." 116 Cong. Rec. 42384, 1 Leg. Hist. at 131. The Statement of the Managers on the Part of the House which was part of the Report of the Conference Committee, stated parenthetically that the Administrator's recall determination was to be made "on the basis of inspections or studies. H.R. Rep. No. 1783, 91st Cong.,

2d Sess. 51 (1970) (hereinafter "Conf. Rep."), 1 Leg. Hist. at 201. These indications are in keeping with the original language of the Senate bill's recall provision, which was substantially adopted by the Conference Committee (*see* Conf. Rep. at 50, 1 Leg. Hist. at 200). Under the Senate provision, the Administrator's recall determination was to be made "through testing, inspection, studies, or other investigation of statistically representative samples of any class or category of vehicles or vehicle engines, or by other means." S.4358, 91st Cong., 2d Sess. 207(d)(2) at p.65 (1970), 1 Leg. Hist. at 595. EPA alleges that although this language was changed to "substantial number" in the final conference version, the excerpts from the Conference Report and Senator Muskie's Summary quoted above indicate that this change in wording was not intended to reflect a change in substance of the original Senate provision. I agree.

EPA cites many cases in its brief which are concerned with indicating how the courts have approached setting the lower bound to the interpretation of "substantial number" and stresses its position that as a matter of law, the large number of vehicles in nonconformity in the instant Chrysler recall situation constitute a "substantial number" under any reasonable interpretation of the phrase.

In any consideration of the vehicle data which may comprise the "substantial number" of nonconforming vehicles as required by Sec. 207(c)(1) in order to justify a recall, each program, study, or survey conducted by EPA must be considered separately, since each varied somewhat in its procedures.

Portland, Oregon Inspection-Maintenance Program

Measurements of idle CO concentration were taken at the tailpipe on twenty-six vehicles of the recall class in

the Portland, Oregon I/M Program (nineteen 360 CID and seven 400 CID vehicles) (Householder EPA Ex. I p. 6; EPA Ex. 3). These measurements were conducted by state I/M personnel with calibrated and properly functioning idle CO analyzers and were accurate measurements of idle CO concentrations (Householder EPA Ex. I pp. 2-5). Sixty-eight percent of the 360 CID vehicles tested had idle CO concentrations greater than 1.0% CO and 71% of the 400 CID vehicles tested had idle CO concentrations greater than 1.0% CO (Dietrick EPA Ex. B pp. 11, 12; EPA Ex. 3).

It should be stated at the outset that it is EPA's position that, with regard to measurements of idle CO concentration taken at the *tailpipe*, as opposed to measurements taken upstream of the catalyst as required on the recall class vehicles under the requirements of the FTP, it is likely that a recall class vehicle exceeding 1.0%[7] idle CO concentration will also exceed the standard of 15 grams/mile CO as measured on the FTP (DeKany EPA Ex. H pp. 41, 42; Nussbaum EPA Ex. O, p. 3; Gockel EPA Ex. G pp. 12-14; EPA Ex. 69, 70, 74-76, 188). EPA attempts to apply this reasoning to all tests conducted in this manner, that is by tailpipe measurement.

Mobile Source Enforcement Division (MSED) New Car Survey, Washington, D.C.

Measurements of idle CO concentration were taken at the *tailpipe* on 18 vehicles of the recall class (11 360-CID and 7 400-CID vehicles) in Washington, D.C., in the MSED New Car Survey (Dietrick EPA Ex. B pp. 11, 12; EPA Ex. 5). These measurements were taken by EPA personnel and were accurate measurements

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[7] This figure is referred to as the "cut point" which EPA alleges would correlate to a failure of the vehicle if subjected to the FTP.

using a calibrated and properly functioning idle CO infrared analyzer (Reichlen EPA Ex. A pp. 24-26). Seventy-three percent of the 360 CID vehicles and 71% of the 400-CID vehicles had idle CO concentrations greater than 1.0% CO (cutpoint). (Dietrick EPA Ex. B pp. 11, 12; EPA Ex. 5). The vehicles were recently purchased vehicles obtained from a list of owners provided by Chrysler to EPA, all with an average of 5,128 miles. (Reichlen EPA Ex. A pp. 23, 24.) Any engine maintenance performed on these vehicles had been performed exclusively by Chrysler dealerships (Dietrick EPA Ex. B p. 25; EPA Ex. 65).

MSED Tampering Survey, Cincinnati, Ohio, Chicago, Illinois, and Newark, New Jersey

Measurements of idle CO concentration were taken at the *tailpipe* on thirty vehicles of the recall class (twenty-eight 360 CID vehicles and two 400 CID vehicles) during the MSED Tampering Survey in the Cincinnati, Chicago, and New Jersey I/M Programs (Dietrick EPA Ex. B pp. 11, 12; EPA Ex. 4). The measurements were conducted by state I/M personnel and EPA contractors and were accurate measurements using calibrated, properly functioning idle CO infrared analyzers (Johnson EPA Ex. K pp. 2-5; Elston EPA Ex. J pp. 2-7). Sixty-four percent (64%) of the 360 CID vehicles and fifty percent (50%) of the 400 CID vehicles had idle CO concentrations greater than 1.0% (Dietrick EPA Ex. B pp. 11, 12; EPA Ex. 4).

All of the above data relating to State Inspection Maintenance Programs, the MSED New Car Survey and the MSED Tampering Survey has been submitted into evidence by EPA in support of its contention that a "substantial number" of vehicles do not conform.

The validity of this data for that purpose is based upon the theory that if the idle CO of a recall class

vehicle exceeds 1.0% by use of tailpipe measurements, using a short test,[8] that same vehicle when subjected to the FTP test will, as previously stated, also fail, exceeding the specifications of the manufacturer (Chrysler) for emissions when the measurements are taken upstream of the catalyst.

In order to accomplish this comparison correlation of some sort is required. There has been much testimony on this subject during this proceeding, primarily concerning the various methods of correlation and their applicability to this problem. A complete discussion of these methods is contained in *Federal Register* notice dated May 25, 1977, entitled "Notice of Proposed Rulemaking—Emission Control System Performance Warranty Regulations—Short Test Establishment." EPA-188.[9]

Chrysler contends that no method of correlation will accurately predict that if a vehicle fails a tailpipe idle CO test (short test) that it will also fail the FTP.

However, EPA appears to interpret the Clean Air Act requirement of "reasonably capable of being correlated" to be met if the short test is capable of reliably and consistently predicting whether the vehicle would pass or fail the FTP even if it cannot provide the exact mathematical magnitude of the passing or failing margin.[10] While an in-depth discussion of this approach might be appropriate at this point, my conclusion on the

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[8] "Short test" means a hot exhaust emissions test of less than five minutes duration.

[9] This document technically does not relate (except parenthetically) to Sec. 207(c)(1) recall proceedings, but rather is applicable to Sec. 207(a) & (b) warranty provisions.

[10] This method and its rationale is described in EPA-188, pp. 26743-44.

applicability of this State I/M and MSED Surveys data does not require it. A brief statement of my reasoning is, however, appropriate.

Contingency table analysis, which is the method of correlation here relied upon by EPA, is based upon the assumption that "cut points" [11] can be found for one or more of the independent variables which will discriminate among the groups of dependent variables. The selection of the cutpoints results in the development of a contingency table.

Simply stated, by the establishment of a "cutpoint" for a given class of vehicles or engines it can be determined by a short test that idle CO concentrations in excess of that cutpoint will enable a prediction that the vehicle will exceed the standard for mass emissions as measured by the FTP.

It is, therefore, necessary, for contingency table correlation, to establish a cutpoint. Under the Proposed Rulemaking—Short Test Establishment, *EPA-188*, EPA has proposed that the following take place in order to establish these cutpoints for State I/M Programs.

> "The identification of testing methods and procedures and the determination that these methods and procedures are in accordance with good engineering practice and are reasonably capable of being correlated with tests conducted under section 206 (a) (1) has involved the agency in an extensive *testing program in which the short tests (plus the FTP)* were administered to each vehicle in the following fleets: [emphasis supplied]
>
> a. *The Experimental Catalyst Fleet.* This fleet consisted of approximately fifty 1973 model year

[11] "Short test cutpoint" means the value as measured by appropriate instruments for each pollutant above which the vehicle fails the short test.

automobiles which had been fitted with catalysts and secondary air injection.

b. *The 1974 Model Year Fleet.* This fleet consisted of approximately one hundred and fifty privately owned 1974 model year automobiles and represented non-catalyst 1975 technology.

c. *The Defects Test Fleet.* This fleet was comprised of five catalyst-equipped cars. The vehicles were first set to the manufacturers' specifications and then a series of defects were introduced and the subsequent effect on emissions recorded.

d. *300-Car Test Fleet.* Approximately one hundred 1975 model year privately owned production vehicles were selected in each of three cities: Chicago, Houston and Phoenix.

In addition, EPA has another program planned to generate additional data on correlatability:

e. *State/EPA Pilot Project.* Approximately 2400, 1975/76 model year light-duty vehicles will be tested in Portland, Oregon by the FTP and the proposed short tests. Approximately 36 engine-vehicle groups will be represented in the sample.

Finally, EPA is evaluating commercially available test equipment for measuring hydrocarbons (HC), carbon monoxide (CO) and oxides of nitrogen (NOx) in terms of accuracy, repeatability, response time and deficiencies in order to provide reports on which is acceptable."

Once this cutpoint is established, the proposed rule goes on to state,

"A significant number of vehicles will be tested in each group to satisfy statistical requirements for sample size. The data will be collected during the first nine months of the model year (these data could also serve to *supplement* Sec. 207(c), the "recall"

provision of the Clean Air Act if testing is performed with rigorous quality control)."

While these rules are only proposed at this time, there are two elements contained therein which I believe should be required to establish a cutpoint correlation in this proceeding. First, the requirement that all test vehicles be tested both by the idle CO method and by FTP before the cutpoint for that group of vehicles is established and second, the number of vehicles which it is necessary to test to establish this cutpoint.

In this proceeding there is testimony from both Mr. DeKany of EPA and Mr. Fagley of Chrysler that there is a point at which it could be assumed that an idle CO short test failure would or could predict an FTP failure.

There is, however, disagreement as to what that figure should be. Mr. DeKany states that 1.0% CO should be the cutpoint, Mr. Fagley states that there is a greater than 50% probability that a vehicle in excess of 1.5% CO measured at the tailpipe would exceed the standard and Mr. Goodwillie, also of Chrysler, states that to pass the standard the vehicle would have to be below 2.0% idle CO. While it is true that there were a few vehicles tested by Chrysler which indicated that vehicles exceeding an idle CO of 1.0% also exceeded the FTP standard, in my opinion, these data from the State I/M Program, the MSED New Car Survey, and the MSED Tampering Survey, while sufficient to indicate that an emission problem exists, they are not sufficient to enable these numbers of vehicles to be used in support of the "substantial number" criterion of Sec. 207(c)(1).

This position is supported somewhat by a finding by the court in *United States of America* v. *Chrysler Corporation*, 10 ERC (BNA) 1948, (D.C. D.C. 1977), wherein the court, while not having to decide if certain vehicles conform to emission standards stated:

"13. There is evidence that the erroneously assembled vehicles in question do in fact conform to California and federal emission requirements respectively, *but this evidence as it relates to the federal cars is based on tests that do not conform to federal test procedures approved by EPA.*" [Emphasis Supplied]

I should state that if an action were brought after the establishment of a cutpoint, in the manner the referenced proposed rules suggest, and contingency tables based thereon, considerably more weight might be accorded to the contingency table correlation to FTP and if testing were performed under rigorous quality control, these data might serve to supplement the Sec. 207(c) recall provision of the Clean Air Act.

It is now necessary to discuss the Emission Factors Program and the Olson Program to determine the acceptability or nonacceptability of the data derived from these programs to support the "substantial number" criterion.

Emission Factors Program-Phoenix, Arizona; Chicago, Illinois; Houston, Texas; St. Louis, Missouri; and Washington, D.C.

This program was conducted by independent testing laboratories under contract to EPA. It was designed to gather information on the emission performance of a random selection of in-use passenger cars and light duty trucks which were representative of the national vehicle population. The candidate vehicles initially were randomly selected without regard to their maintenance histories or usage. Each owner was, however, required to complete two questionnaires on his vehicle, one at the time of the initial test and one subsequent to testing, relating to general background information as well as specific data including documentation on the usage and maintenance history of his vehicle.

Each contractor was required to obtain and test the number and type of vehicle required by his contract.

Selection of the Sample

A listing of candidate vehicles was obtained from commercially available vehicle registration lists using an "n th name" selection process. For example, if the contractor wished to buy names of 1,000 owners and the data firm had 10,000 suitable names available, they would print out every tenth name. Owners were then solicited by direct mail and provided with a postpaid reply card. This method is random and resulted in procurement of 75% to 90% of the test fleet. The remainder of the vehicles were usually procured from responses to media solicitations although a few of the vehicles late in the program resulted from parking lot searches or direct rentals.

In St. Louis, the situation was somewhat different in that recent State legislation denied commercial firms the access to vehicle registration data on 1975 and later models. The 1975 vehicles here were primarily obtained through the media although some were the result of contacts with employee associations at large companies in the local area. However, there was no preselection.

The test procedures utilized in the Emission Factors Program were substantially as described in the *Federal Register* for the Federal Test Procedure.

The major deviations were in the deletion of the evaporative emissions portion of the FTP (including fuel tank heat build and one hour preconditioning), the absence of humidity control in the test cell and the method of determining inertia weight for the test vehicles.

Chrysler contends that these deviations from the FTP should invalidate the test results. However, EPA has shown that the minor deviations were in a direction

more stringent than the *Federal Register* prescribes due to the need to ensure comparable results from several contractors in a number of locations. They either had no effect on the results of the FTP or something else was substituted.

The intent of the FY74 Emission Factor Testing Program was to produce valid exhaust emission results on typical in-use vehicles in a "real-world" situation. For this reason, no evaporative emission testing was performed. Therefore, these modified test procedures, which were primarily directed at elimination of evaporative emission measurements, had no significant impact on the accuracy or precision in the measurement of exhaust emissions.

Measurements of idle CO concentration were taken at the *tailpipe* on twenty-six vehicles of the recall class (eighteen 360 CID vehicles and eight 400 CID vehicles) in the Emission Factor Program in Phoenix, Chicago, Houston, St. Louis, and Washington, D.C. (Dietrick EPA Ex. B pp. [sic] 8; EPA Ex. 2). These measurements were conducted under laboratory conditions (White Tr. p. 3-64). Fifteen out of eighteen of the 360 CID vehicles and seven out of eight of the 400 CID vehicles failed the FTP in the "as received" condition.

Since I conclude that the FTP results in this program are valid, and the sample was selected randomly, the question remains as to whether the criterion "properly maintained and used" has been met.

As stated above the maintenance and use of a vehicle was not a criterion to its being selected for testing. However, questionnaires were required of the owner which included questions concerning the maintenance history and use of the vehicle in addition to providing his documentary maintenance records. Maintenance and warranty records were also submitted to EPA by Chrysler

for such vehicles. A summary of the maintenance history of each recall class vehicle in the Emission Factor Program is contained in *EPA-9*.

While this program did not have as one of its goals the question of whether or not a vehicle had been properly maintained and used, the summaries contained in EPA-9 are sufficient in my opinion to make the determination that the recall class vehicles tested in this program were properly maintained and used substantially in the manner set forth in the Owners Manual and, therefore, will be included as data vehicles in support of the "substantial number" criterion.

Olson Program

The purpose of this program was to test 1975 model year Chrysler vehicles with 360/400 CID engines to confirm or reject indications of vehicle nonconformities with Federal emission standards as evidenced in State I/M Programs, MSED Surveys, and the Emission Factors Program.

The objective was to select a random sample of 1975 Chrysler 360 and 400 CID vehicles which were representative of vehicles which had been properly maintained and used by owners and then to conduct emission tests in accordance with the Federal Test Procedure (FTP). The tests were to be conducted on the vehicles in their as-received condition and after extensive maintenance operations had been performed.

Chrysler was invited to participate in the program and some of Chrysler's recommendations were incorporated into the program.

The Olson Laboratories, Livonia, Michigan, was selected as the contractor to run the program. The test facility went through an extensive laboratory checkout. The test personnel were all tested and qualified prior to being allowed to perform key testing functions.

Selection of the Sample

Procedures for the procurement of test vehicles were carried out by contractor personnel and EPA personnel. Listing of 1975 360 and 400 CID Chrysler vehicles registered in Wayne County, Michigan, were obtained by Olson from the R.L. Polk Company. Polk maintains computer files of vehicles registered in the United States. The specified test vehicles were located by Polk in its files using the vehicle identification numbers and the zip codes for Wayne County. Two separate lists were compiled by Polk—one for the 360 CID vehicles and one for the 400 CID vehicles. The 360 CID list contained the names and addresses of 3,688 owners and the 400 CID list had 1,750 owners.

Upon receipt of these vehicle lists from Polk, Olson personnel randomized each list separately by assigning a random number to each owner from a random number table. The two vehicle lists were reordered by listing owners sequentially according to the assigned random number. This is a standard statistical procedure for developing a random sample.

After the lists of owners had been randomized, Olson procurement personnel then attempted to contact vehicle owners in the order in which they appeared on the randomized lists. First, introductory letters explaining the program and soliciting owner participation were mailed to a block of owners on the random list. The blocks ranged from 25 to 50 owners. Along with the letters were sent postage-paid cards which owners were to fill out (description of vehicle, phone number and the best time to reach them by phone) and mail back to Olson. After a block of introductory letters were mailed, Olson procurement personnel attempted to find telephone numbers for all persons in that mailing. This was done by checking local phone directories and calling directory assistance operators. After allowing a period of time for

the owners to receive the introductory letters, Olson procurement personnel called all owners for which a telephone number was available (either from the phone directory or from post cards returned by owners). Attempts were made to contact by phone all owners for which a phone number was available regardless of whether or not the owners returned the post cards. In phone calls with potential participants, Olson personnel explained the program and the incentives* for participation and ascertained whether the owner was willing to permit his vehicle to be tested. If the owner was willing to permit testing of his vehicle, Olson then screened out (i.e., eliminated from the test sample) vehicles which owners indicated:

1) were not purchased as new vehicles

2) had not had oil and oil filter changes as recommended by Chrysler

3) had not had tune-ups as recommended by Chrysler

If all potential test vehicles of a block were processed (i.e., tested or rejected) and the test sample was not filled or if it became obvious prior to the final elimination of all potential test vehicles in the block that more owners would have to be contacted to fill the test sample, introductory letters were mailed to the next block of owners on the randomized list. The procedures for contacting owners were repeated for the new block of owners. This process continued until the test sample was filled.

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* The incentives were:

1) a $50 savings bond,

2) a tune-up for the test vehicle,

3) a full tank of gas after test completion, and

4) a loaner vehicle.

Chrysler contends that there are two major flaws in the Olson sampling procedure. The first is the use of a single site, Wayne County, Michigan. The single site was primarily the result of contractor choice and convenience, rather than intentional design. (Nussbaum, Record at 5-154—5-155; Reichlen, Record at 73.) EPA's leader of the multi-area Factor Program, John White, testified that some differences in maintenance and driving habits *are* found from area to area. (White, Record at 3-8 to 3-10.)

EPA experts have themselves admitted that Wayne County must be representative of the rest of the nation in order to permit valid conclusions based on the Olson data, but Chrysler contends that EPA has failed to fulfill its burden to prove Wayne County is indeed representative.

I would agree with Chrysler if the test results of the recall class vehicles had not so conclusively shown that a substantial number of vehicles in this program were in nonconformity. It is doubtful if Wayne County residents and vehicle owners would be so completely irresponsible in the care of their vehicles so as to allow the conclusion that they are that different from the rest of the country. Also EPA-1-5 indicates that nonconformities to a large extent do exist throughout the country, which leads to the conclusion that Wayne County is in all probability quite representative. Chrysler also argues that for various reasons such as maintenance habits, mechanics ability, use of monetary incentives, non-use of fleet vehicles and use of interested persons for surveying and screening, all tend to the conclusion that the sample employed in the Olson Program was biased and therefore not representative nor will it support a finding that the vehicles were "properly maintained."

This argument on behalf of Chrysler was not supported by the offering of any affirmative evidence and is therefore rejected.

The second major problem with the Olson data according to Chrysler is the large number of non-respondents. Both Dr. Lipson (Chrysler Exhibit L-2 at 4, Record at 3673) and a noted statistical authority relied on by EPA, state that the characteristics of those who do not respond to a particular survey technique may well be and often are significantly different from the characteristics of those who do.

EPA has admitted that the Olson survey involved a high percentage of non-responses, but has stated that Chrysler has failed to prove that this factor is significant and that EPA did all it could to minimize the problem. Since it is EPA's burden to prove its studies are representative, it is EPA's burden to prove that non-response made no significant difference. Dr. Lipson, a Chrysler witness, testified that EPA should have conducted different surveys and tests to determine whether this variance from random selection was in fact unimportant.

While most of the cross-examination in these areas did indicate some variance *could* exist, there were no affirmative submissions by Chrysler to indicate that if any variance did in fact exist, that it had any impact upon the representativeness of the sample relied upon by EPA. I cannot conceive of a sample of any kind which would not be subject to the slight variances which were elicited by Chrysler on cross-examination of EPA witnesses and stated by Chrysler witnesses on direct testimony. Chrysler did not bring any variances out and should have. Therefore, the reasons suggested by Chrysler for rejecting the sample for non-representativeness are found not to be of consequence and are rejected. This, however, does not conclude that the "substantial number" criterion required by Sec. 207(c)(1) has been met and will be addressed later.

In support of my rejection of these contentions by Chrysler refer to *Brown Shoe Company* v. *United States*,

370 U.S. 294 (1962) wherein the Supreme Court rejected the defendant's arguments that certain flaws in the statistics relied on by the government made the market shares shown therein unreliable, stating (370 U.S. at 342, n. 69):

> * * * In summary, although appellant may point to technical flaws in the compilation of these statistics, we recognize that in cases of this type precision in detail is less important than the accuracy of the broad picture presented. We believe the picture as presented by the Government in this case is adequate for making the determination required by Sec. 7: whether this merger *may* tend to lessen competition substantially in the relevant market.

As is manifest from this Supreme Court decision, precision in details is not required so long as the general, broad picture of the emission problem is accurately portrayed.

While the record contains conflicting testimony as to the validity and randomness of the sample of recall class vehicles, I find that EPA did everything humanly possible to obtain a random sample for its Olson testing program. Just picking at the sampling method, without some further concrete criticizm [sic] is not given any weight here. There has been no purposeful bias shown to exist which would invalidate the randomness of the sample obtained.

Dr. Singpurwalla stated that based upon the information given him by EPA regarding the fact that all the vehicles in the recall class are manufactured according to the same engineering specifications, and hence are physically the same, his judgment is that the chosen samples are representative of the vehicles in the recall class. Thus, estimated failure rates from the samples can be interpreted as being applicable for the entire recall class. In an attempt to reinforce this assertion, an

analysis was conducted on all the available data from the recall class to see if there were any differences in the emissions performance of recall class vehicles tested at different geographic locations.

Such an analysis using all the available data produced no evidence to refute the assertion that emission characteristics among the cities considered are similar.

Further, an earlier published Society of Automotive Engineers Paper, "Exhaust Emissions 1966-1972 Model Year Light-Duty Motor Vehicles" by White, Domke, and Williams (SAE # 741005), reports conclusions concerning the behavior of emissions in various locations. This paper states:

> "In an effort to assess the extent to which such factors as local driving practices, climate, topography land-use and other geographical factors affect emissions, vehicles were sampled in several cities which in turn were selected in such a way as to span the range of factors. Only small differences, were observed between the cities in the emission levels measured in the survey. Exceptions were Denver and Los Angeles."

Even though this work was not based on recall class vehicles, the general conclusions support the assertion of no major regional emission differences.

Measurements of idle CO concentration were taken at the tailpipe on twenty vehicles of the recall class (ten 360 CID vehicles and ten 400 CID vehicles) in the Olson Program in Livonia, Michigan (Dietrick EPA Ex. B pp. 11, 12; EPA Ex. 1). All ten (100%) of 310 CID recall class vehicles exhibited CO emissions in excess of the FTP standard of 15 gm/mi. Eight out of the 10 (80%) 400 CID recall class vehicles exhibited CO emissions in excess of the FTP standard of 15 gm/mi.

Chrysler contends that the evidence that the Olson cars were "properly maintained" is too unreliable to support such a finding.

Before elaborating on individual maintenance records for the test vehicles, the argument by Chrysler that EPA has issued *proposed* rules or regulations to govern the standard of proof for "proper maintenance" for warranty purposes which should apply to this proceeding must be disposed of. The fact that an agency *proposes regulations* or *seeks changes* in the statute through the Congress has no bearing in fact upon the practices or procedures utilized by an agency in the enforcement of its mandates. *National Petroleum Refiners Assn.* v. *F.T.C.*, 482 F.2d 672 (D.C. Cir. 1973).

EPA-8 contains a summary of Olson Program recall class vehicle maintenance. A review of this summary clearly establishes that the proper maintenance requirement of Sec. 207(c)(1) has been sufficiently shown for the purpose of using the data on these vehicles to support a recall action.

During the hearing in this matter Chrysler meticulously examined through witnesses the maintenance histories of the majority of the recall class vehicles both in the Emission Factors Program and the Olson Program in an attempt to show that EPA had not presented sufficient evidence that the vehicles were "properly maintained." While I have rejected EPA's contention that "properly maintained" means merely that the owner has complied with the schedule in the Owner's Manual notwithstanding no maintenance was done on the vehicle, I likewise must reject Chrysler's contention that "properly maintained" requires the identical degree of proof on the part of EPA for recall purposes as would be required of an owner seeking warranty maintenance. Any evidence produced by EPA is governed by the "state of maintenance" of the universe it is investigating. While it is

true that EPA does have the burden to show that the recall class vehicles have been "properly maintained and used," it would seriously impair its enforcement mandate to require that the degree of proof required be other than a substantial showing as opposed to that degree of proof required of an owner for warranty purposes.

While it is my view that such a rule should be applied to any similar action, it should be made clear that in my opinion EPA in this proceeding has made more than a substantial showing of proper maintenance and use to carry its burden of proof in this respect.

Having concluded that the data produced in the Emission Factors Program and the Olson Program may be used to support the criterion of "substantial number" it is now necessary to determine if the number of vehicles actually constitute a "substantial number" upon which to base a recall.

Chrysler contends that even if the Olson and Emission Factors Programs' vehicles are combined, the resulting sample size is still too small to be considered statistically significant.

There is a population of approximately 210,000 recall class vehicles involved. The combined sample size for Olson and Emission Factors for the recall class is 46 vehicles. This represents a proportion of approximately 0.02% of the population. Of the 46 vehicles, 18 out of 20 tested in the Olson Program exceeded emission specifications and 22 out of 26 exceeded the emission standard in the Emission Factors Program, making a total of 40 failures out of the total population of 46 vehicles.

Chrysler contends that in order to satisfy the "substantial number" requirement of Sec. 207(c)(1), EPA must demonstrate that at least fifty percent of the vehicles in the recall class do not meet applicable emission

standards. This is based upon Chrysler's position that the 1970 Amendments to the Clean Air Act intend to require merely that the "average" vehicle comply with emission standards. EPA asserts, however, that this contention represents an incorrect interpretation of the Clean Air Act as amended in 1970. I agree.

The 1970 Amendments do not endorse the "averaging" concept. The language of the Act itself, combined with the legislative history, demonstrate clearly that the 1970 Amendments intend to require that each individual vehicle comply with applicable emission standards both off the assembly line and in use. In support of its position, Chrysler quotes an excerpt from the report of the Senate Public Works Committee which accompanied S.4358 (the Senate version of the 1970 Amendments) to demonstrate the Senate version of Sec. 206 took an "averaging" approach to prototype testing and assembly line testing. S. Rep. No. 1196, 91st Cong., 2d Sess. 29 (1970) (1 Leg. Hist. 492). That same reference, however, states:

> "Under section 207, each production line vehicle would be required to comply with applicable emission standards. Each vehicle would be required to comply with standards for a 50,000 mile lifetime. . . ."

The Conference Committee specifically rejected the Senate version of Sec. 206 and instead adopted the House version which took an "every vehicle" approach to certification and assembly line testing. As stated in the Conference Committee Report,

> "The Conference substitute adopts substantially the provisions of the House bill relating to prototype and production line testing." H.R. Rep. No. 1783, 91st Cong. 2d Sess. 50 (1970) 1 Leg. Hist. at 200.

Furthermore, during subsequent hearings in 1972 concerning the implementation of the 1970 Amendments, the Senate Subcommittee on Air and Water Pollution of the Committee on Public Works explained in detail that

the intent of the warranty, certification, and assembly line test provisions was to require that each individual vehicle comply with applicable emission standards. *Implementation of the Clean Air Act Amendments of 1970—Part 3 (Title II), Hearings Before the Subcommittee on Air and Water Pollution of the Senate Committee on Public Works*, 92d Cong., 2d Sess., Ser. No. 92-H31, at pp. 1424-43 (1972). Through lengthy questioning of former Administrator Ruckelshaus, the members of the Subcommittee sought to ensure that EPA would not permit the manufacturers to use "averaging" as the means for determining compliance with the assembly line test requirements. The Subcommittee believed that the "averaging" concept would represent an easing of the Act's requirements in a manner inconsistent with the intent of Congress. During this questioning, Senator Muskie reviewed the relevant legislative history so as to clear up any possible ambiguity regarding the Act's approach to "averaging":

> "With respect to Senate language, first of all, I think if there is ambiguity, it ought to be understood in the light of the specific requirements in the Senate version of the bill. Second, we have to take into account, in reading the legislative history, the language of the House bill which was adopted by the House-Senate conference, rather than the Senate language. Third, we have to understand fully the implications of the warranty and recall provisions, because they are all part of the legislative language.
>
> "Now, speaking in terms of intent, we understood at the time this legislation was adopted that we did not have the production line testing, and that as conditions were then, averaging would be continued because there was no substitute for it at that point. But it was the clear intention of the Senate bill, as reflected in the warranty requirements and as reflected in the recall provisions, that the Senate intended as rapidly as possible [*sic*]. That is sup-

ported by the Veneman letter, that assemblyline tests would be developed, and that they would not incorporate an averaging concept. So our target, and it was independent of the 1975 deadline, I may say, our target was to achieve the goal as quickly as possible.

"Now, if there was any ambiguity in the Senate committee report, it was resolved certainly by the action of the conference in adopting the House language, which was very explicit on this point."

In further questioning, Senator Muskie sought assurances that EPA policy was consistent with the "every vehicle" approach:

Senator MUSKIE. So that the only way the manufacturer can safely respond to your policy, is to take whatever steps are necessary to insure that every 1975 model car that comes off the assembly line meets the 1975 standard?

Mr. RUCKELSHAUS. Senator, I think that is what the law says.

Senator MUSKIE. I want to be sure your policy says that.

Mr. RUCKELSHAUS. Yes, and, therefore, my policy says that.

Similarly, Senators Baker and Eagleton wanted to be satisfied that EPA was adopting the "every vehicle" approach as its policy toward the manufacturers:

Senator EAGLETON. As I hear Mr. Ruckelshaus this morning I share the same observation as Senator Baker, that Mr. Ruckelshaus is making it clear insofar as the 1975 vehicles are concerned, that each and every vehicle must meet the appropriate standard in order to be in compliance with a specific warranty provision applicable to each and every motor vehicle.

Mr. RUCKELSHAUS. That is right.

After quoting from the Senate report, the House report and Conference Committee report, Senator Eagleton quoted Sec. 206(b)(2)(A) of the Act itself, "which, as I read it, does not permit averaging." Senator Eagleton went on to explain,

> "I just do this merely for the purpose of refreshing our memories, as to the legislative history of the act, but based on what Mr. Ruckelshaus has said, to answer my question, Senator Baker's question, Senator Muskie's question, I am satisfied each and every 1975 vehicle must meet the appropriate standard, or else the negative result is no warranty —a warranty which would be negative.

The entire line of questioning by the members of the Subcommittee makes it clear that Congress intended to adopt the "every vehicle" approach in the 1970 Amendments. I also adopt this approach.

In support of its position that "substantial number" is synonymous with "majority," Chrysler cites the fact that EPA permits manufacturers to have a failing rate of 40% under the recently promulgated assembly line test regulations, which are known as the Selective Enforcement Auditing Regulations (SEA). The SEA regulations [12] implement the assembly line test provisions of Sec. 206 of the Act, which provisions were the subject of the excerpt from the 1972 Subcommittee hearings cited above. The SEA regulations do not endorse "averaging" as an appropriate control strategy under the Clean Air Act.

As explained in the preamble to the final regulations, the proposed regulations originally provided that the permissible failure rate would be 10%. The 10% figure was subsequently changed to 40%. This 40% figure represents *a level in emission performance* of a class of

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[12] 40 CFR 86.601-86.613 (1977).

vehicles and not to the question of whether the average or majority of the vehicles meet the standard.

In issuing these regulations, EPA was aware of the fact that this concept could not be applied in all enforcement situations. The preamble specifically recognized that the Acceptable Quality Level (AQL) concept was not to be deemed applicable to other enforcement programs such as recall:

> "The AQL established by these regulations is intended to apply only to SEA and should not be construed as being applicable to other enforcement provisions established by the Clean Air Act." 41 FR at 31475-76.

I therefore reject the "averaging" and "majority" concepts espoused by Chrysler and accept the concept that it was the intent of Congress that "every vehicle" conform to the standard.

The next question is whether the number of vehicles which were tested and failed the FTP in the Olson and Emission Factors Programs constitute a "substantial number" to satisfy the Sec. 207(c)(1) criterion and are representative of the entire population of recall class vehicles.

Dr. Singpurwalla, a statistical expert relied upon by EPA, testified that based upon the Olson and Emission Factors Programs, which comprise tests on forty-six recall class vehicles in six different locations, ninety-three percent of the 360 CID vehicles tested and eighty-three percent of the 400 CID vehicles tested exceed the standard and that from these results, it can be projected with ninety-five percent confidence, that not less than seventy-nine percent of all 360 CID vehicles and not less than sixty-two percent of all 400 CID vehicles are exceeding the standard in use. Even if only the results from the Olson Program are relied on, Dr. Singpurwalla testified

that it can be projected with ninety-five percent confidence that not less than seventy-nine percent of all 360 CID vehicles and not less than forty-nine percent of all 400 CID vehicles are exceeding the standards in use.

Both Dr. Singpurwalla and Dr. Lipson, Chrysler's statistical expert, agreed that the statistical techniques used in making projections from the Olson and Emission Factor Programs to the entire population of recall class vehicles are standard accepted techniques done in the accepted statistical manner.

Dr. Singpurwalla stated that the absolute sample size is what is important in statistical calculations. And that it is a well known statistical conclusion that the relative size (for instance, 10 cars randomly sampled out of 200,000) is not a crucial matter. Thus, small samples out of very large populations (virtually infinite) yield valid results.

In my view, the cases [13] cited by both parties in their briefs point up the great latitude that the court has in applying the "substantial number" criterion to a given set of figures.

In deciding whether the sample size and number of nonconformities constitute a substantial number, it is necessary to look at all of the surrounding facts. In so doing we find that both parties agree that nonconformities do exist; that while the data produced from the State I/M Programs and the MSED Surveys is not included in the determination of substantial number, the evidence presented by EPA in these areas has not been rebutted and therefore can be recognized for the fact

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[13] By Chrysler, Ochoa v. Monsanto Co., 473 F.2d 318 (5th Cir. 1973, aff'g. [sic] 335 F.Supp. 53 (S.D. Tex. 1971).

By EPA, Zippo Manufacturing Co. v. Rogers Imports, Inc., 216 F.Supp. 670, 681 (S.D.N.Y. 1963).

that nonconformities do exist to a high degree in those areas where such data was produced and in those from the areas surveyed in the Emission Factors Program.

As stated in *Brown Shoe Co.* v. *United States, supra,* while Chrysler may point to technical flaws in the compilation of these statistics, it must be recognized that in cases of this type precision in detail is less important than the accuracy of the broad picture presented. I believe that the picture as presented by EPA in this case is adequate for making the determination required by Sec. 207(c)(1) that a "substantial number" of "properly maintained and used vehicles" of the recall class "do not conform" to the regulations under Sec. 202 of the Clean Air Act when in actual use throughout their useful life.

From a purely statistical viewpoint, and a viewpoint which leads me to the conclusion that the sample is representative, is the fact that a large percentage of the total sample of forty-six vehicles have been shown to be in nonconformity in the as-received condition. It may be that a further sample would have either agreed or disagreed with the results of this sample, allowing somewhat of a more accurate determination of its results, however, the overall, broad picture presented, culminating with this sample leads me to the conclusion that a "substantial number" of recall class vehicles are in nonconformity.

Foreseeability and Defect in Design

The question of foreseeability involves a very complicated issue. EPA contends that with regard to the design of the carburetor, Chrysler did not utilize the state-of-the-art and failue [sic] to so do with the resultant misadjustments found here constitutes a "defect in design" which was "foreseeable".

EPA asserts that Chrysler is responsible for causing the condition of idle mixture misadjustment on a substantial number of recall class vehicles because the design of the idle mixture system and associated emission control components (1) contains no mechanism to limit idle mixture, (2) is overly sensitive to small turns of the adjustment screw, (3) is overly sensitive to temperature and idling time, and (4) contains no alternative means of providing excess air to the catalyst in the event misadjustment occurs.

EPA cites the following facts to support its contention. Chrysler's idle mixture adjustment specification is 0.3% idle CO measured upstream of the catalyst, *EPA-48*, while the idle mixture adjustment range of recall class vehicles permits adjustment up to 8.0% idle CO when measured at the tailpipe. *EPA-91*. At idle CO concentrations in excess of 1.0% CO, the ability of the catalyst to function is impaired because the overly rich fuel-air mixture causes an insufficiency of oxygen which could have been remedied by an air pump providing oxygen to the catalyst, it being the primary device relied on by Chrysler to enable recall class vehicles to meet the 1975 Federal emissions standards for CO. Chrysler's design of the recall class vehicles did not provide a means to limit the idle CO concentration which could result from idle mixture misadjustment. *EPA-91*.

M Robert Harris, Chrysler's carburetor design engineer, testified that in the 1975 model year vehicles General Motors and Ford placed their limiter caps at the rich stop which is the stop where idle CO does not exceed their specifications. And that although Chrysler specified to its carburetor manufacturer (Holley) where to place the limiter cap on the idle screw in the recall class vehicles, it did not specify that the cap be placed at the rich stop.

Mr. Harris further stated that in his position in "carburetor design" he was not concerned with catalyst efficiency and that the limiter cap was not designed to limit adjustment of the idle mixture screw. He further testified that no method was used to accomplish this limitation.

In an April 15, 1976 letter from Chrysler to the State of New Jersey in response to a letter from that state wherein its officials expressed their concern over high idle CO emissions from Chrysler vehicles found as the result of the State Inspection Maintenance Program, Chrysler admits that the high emissions measured are the result of the lack of an air pump and the sensitivity of the idle mixture screws which permits adjustment to a mixture which is rich enough to cause excessive emissions. (EPA-91) The letter further states that these problems are being corrected in the 1976 and 1977 models.

Assuming Chrysler should have foreseen the problem of misadjustment and did not utilize the state-of-the-art, does the law make Chrysler liable to recall these vehicles. Chrysler says it does not. That product liability law does not extend to this situation, only to risks of "serious bodily injury or death." That "foreseeability" is not mentioned in the Clean Air Act and further, the manufacturer is not responsible for anticipation of all foreseeable misuses.

Chrysler further alleges that common law principles of product liability do not guide the interpretation of comprehensive congressional statutes. Thus, it is the Clean Air Act itself, not common law principles, which should determine the elements of liability in a recall action and said Act does not refer to foreseeability.

To counter this argument EPA relies to some extent upon the legislative history of the Clean Air Act Amendments of 1977.[14]

Therefore a very important part of the EPA's case relies upon the application of the law of product liability due to the foreseeability of the problem of misadjustment based upon carburetor design and the state of the art during the design period and the applicability of the law of agency in permitting Chrysler to exert a certain degree of control over its dealers in the area of maintenance of emission control systems of Chrysler products.

EPA agrees that a manufacturer can counter a determination of "properly maintained" by asserting, as an affirmative defense, that service and maintenance operations were performed incorrectly on the vehicle and that such incorrect performance was not reasonably foreseeable. It should be noted that this affirmative defense is not intended to be limited solely to scheduled maintenance, and can encompass the incorrect performance of any unscheduled items as well. This defense is also not intended to be limited to work performed by the service industry, and can include the incorrect performance of service and maintenance operations by owners who choose to do their own work. Congress was well aware of the large degree of control that the automobile industry can exercise over the service industry. Congress intended to place responsibility for the maintenance situation squarely on the shoulders of the manufacturers, leading toward the goal of a maintenance free automobile. *See* 116 Cong. Rec. 33095-96 (1970), 1 Leg. Hist. at 334-35. It is therefore apparent that Congress never intended the manufacturers to escape liability under the Clean Air Act in all cases as a result of some inadequacy on

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[14] In reaching my conclusion, I do not rely upon the Clean Air Act Amendments of 1977 or its legislative history.

the part of the service industry. However, it also appears that Congress did not intend to make the manufacturers absolutely liable for every action of the service industry. It is EPA's position that a manufacturer can avoid liability if the service and maintenance operations which were performed incorrectly were so grossly negligent as to be unforeseeable.

In the area of affirmative defenses, foreseeability, and burdens of proof, EPA relies upon *United States* v. *General Motors Corp.*, 518 F.2d 420 (D.C. Cir. 1975). While I do not believe this case is analogous to the instant proceeding it contains applicable language. It involved a dispute over the definition of "defect" in the context of the defect notification provisions of the National Traffic and Motor Vehicle Safety Act of 1966. These provisions require manufacturers to notify purchasers when a safety related defect has been found to exist. The Government sought to establish the existence of a defect in certain wheels used on various pickup trucks. The District Court granted the Government's motion for summary judgment and adopted the Government's position that a "defect" existed whenever there was a large number of failures in performance, regardless of the cause of the failures. General Motors appealed this decision and contended that the cause of the wheel failures was owner abuse in overloading the trucks with heavy campers or special bodies, and that a component could not be considered defective unless a significant number of failures occurred in vehicles which were operated in conformity with the manufacturer's specifications.

In an opinion by Judge Leventhal, the court rejected the positions of both the Government and General Motors, and determined that,

> "A vehicle or component "contains a defect" if it is subject to a significant number of failures in normal

> operation, including failures either occurring during specified use or resulting from owner abuse (including inadequate maintenance) that is reasonably foreseeable (ordinary abuse), but excluding failures attributable to normal deterioration of a component as a result of age and wear."

The court determined that based upon the facts the Government can make a prima facie case simply by showing a significant number of failures in performance. However, the court went on to state:

> "We hold that the Act permits the manufacturer to establish, as an affirmative defense, that the failures were attributable to gross and unforeseeable neglect of vehicle maintenance."

In discussing the allocation of burdens of proof, the court stated that its interpretation would promote "fair and efficient enforcement of the statute" and would eliminate the enforcement problems that would result if the Government were required to prove that each failure occurred on a truck that had never been grossly overloaded or unforeseeably abused. In explaining the nature of the burden placed on the manufacturer, the court stated,

> "The manufacturer will bear the burden of proving that the failures occurred on vehicles operated outside conditions of use or maintenance that were reasonably foreseeable under the circumstances. The terms "reasonably foreseeable", "reasonably contemplatable", and "ordinary abuse" are intended to reflect the expected range of actual operation taking into account past experience with comparable vehicles and information provided to owners about the capabilities of their vehicle.

The court reversed the District Court's granting of summary judgment and remanded the case for a factual determination as to whether the wheel failures were unforeseeable.

In the General Motors case the fact to be determined is whether or not the "defect" may have been foreseeable. The defect would cause a failure in performance in certain wheels used on various pick-up trucks. A similar finding is required in this proceeding in order to hold Chrysler liable, that is, the design of the carburetor is such that it cannot be properly adjusted to conform to the Clean Air Act standards, as is warranted in the Owner's Manual, and is therefore defective in that sense. The Clean Air Act placed a duty upon Chrysler to design the carburetor so as to enable it to be adjusted in accordance with those standards.[14b] EPA has shown that the technology was available to Chrysler to make the idle mixture screw less sensitive, to provide an air pump to assist the catalyst, to provide more restrictive adjustment of the idle mixture screws, either internally or externally and none of these steps were taken in the recall class vehicles. While Chrysler has attempted to rebut these assertions, it has not presented any affirmative evidence to show its design was adequate to conform to the applicable standards. The evidence is quite to the contrary. Some evidence has been presented which indicates that when properly adjusted, these vehicles will conform to the standard. However, such evidence is sparse and generally consists of adjustments under laboratory conditions as opposed to shop conditions.

Mr. Harris of Chrysler testified that the effectiveness of the catalyst was not considered in the design of the carburetor. Since such an obligation was placed upon Chrysler regarding all facets of the design discussed

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[14b] Chrysler 1975 recall class vehicles manufactured for sale only in California were equipped with air pumps and met the more stringent emission standards of the State of California. These were the only recall class vehicles equipped with air pumps.

above it must be found that Chrysler's lack of effort in this regard constitutes a "defect in design."

The starting point for all product liability law is the existence of something in a product which can be characterized as a "defect" either in design or manufacture. That is, the product must exhibit some type of defective condition. The question of what constitutes a "defect" is not capable of a precise answer in all cases, and there is no single definition which is universally agreed upon by the courts. A defective product can be one which fails to match the quality of most similar products, or one which deviates from the norm. *E.g.*, *Jiminez* v. *Sears, Roebuck & Co.*, 4 Cal. 3d 379, 383, 482 P.2d 681, 684, 93 Cal. Rptr. 769, 772 (1971); *Baker* v. *Chrysler Corp.*, 55 Cal. App. 3d 710, 715, 127 Cal. Rptr. 745, 748 (1976). "Defectiveness" can be determined without a defined set of standards, and a product can be considered defective if it does not fulfill its intended purpose. *Cronin* v. *J.B.E. Olson Corp.*, 8 Cal. 3d 121, 125-26, 501 P.2d 1156-57, 104 Cal. Rptr. 433, 436-37 (1972). As stated by the Supreme Court of New Jersey, "A product is defective if it is not fit for the ordinary purposes for which such articles are sold and used. . . Establishing this element requires only proof, in a general sense and as understood by a layman, that 'something was wrong' with the product." *Scanlon* v. *General Motors Corp.*, 65 N.J. 582, 591, 326 A.2d 673, 677 (1974). In *Scanlon*, the court went on to state that a defect can be proved by expert testimony. *Id.* at 591, 326 A.2d at 678.

In the area of product liability law involving defects in design, the question of whether a manufacturer will be liable for injury caused by the defective design depends upon the use to which the product has been subjected by the owner or other persons. In general a manufacturer is responsible for designing a product for which its use is reasonably foreseeable, including foreseeable

misuse. *E.g., Thomas* v. *General Motors Corp.*, 13 Cal. App. 3d 81, 91 Cal. Rptr. 301, 306 (1970).

To the above applications of product liability law, there must be added those areas where new laws are enacted. In this proceeding the first opportunity has been presented to the court for a determination as to whether or not such an application of law should be made.

The Clean Air Act imposes a statutory obligation upon the manufacturer to design and produce a vehicle emission system which will, [sic, during?] its useful life, conform to the applicable emission standards. Any failure to do so is noncompliance with the Act. The standards set forth in the Act are intended for the purpose of cleaning up the nation's air quality for the benefit of man and the environment. Any failure to accomplish such purpose by any means, including a "defect in design" carburetor, as here, constitutes a violation of the intended purposes of the Act for which liability attaches. Chrysler has admitted in its letter to the State of New Jersey that the carburetor does contain shortcomings which are concerned with design.

As to foreseeability, it does not seem plausible to accept the argument that a manufacturer could foresee that mechanics employed by Chrysler dealers, with all the service manuals at their disposal, the training programs available to them and a carburetor certified by EPA as being capable of conforming to the standard would have any reason to not properly adjust the vehicle.

However, EPA has shown through the State I/M Programs, the MSED Surveys, the Emission Factors Program and the Olson Program that even in spite of all of these efforts, whether fully utilized or not on behalf of Chrysler, the fact remains that the design of the emission control system, including the carburetor, encourages or fosters the gross misadjustments which have been shown to exist and therefore should have been foreseen.

I also place great weight upon the evidence adduced by EPA to the effect that the infrared analyzers, used to adjust the system to Chrysler's specifications while probably available in late 1974 and early 1975, were not, in fact, in widespread use in automotive repair shops during that time, or even as late as September 1975. *EPA-49.*

Having found that a "defect in design" did exist and that misadjustments should have been foreseen, it is not necessary to determine whether Chrysler dealers are agents of Chrysler. However, since the question is presented and briefed, I will discuss my opinion in this regard.

Agency

EPA contends that regardless of the interpretation of the term "proper maintenance", the manufacturer is responsible for misadjustments caused by dealers during servicing since the dealers are agents of the manufacturer for the purpose of emissions related servicing of the manufacturer's vehicles, when the manufacturer has the right to control or controls the method and manner of performing emissions related services and since Chrysler has an express statutory duty under the Act to assure that vehicles meet emission standards at the time of sale which Chrysler may not delegate.

EPA alleges that this contention is supported by most courts who have analyzed the automobile dealer-manufacturer relationship. Such courts have employed the "right to control" test to determine whether an agency relationship is established. That the "right to control" is demonstrated by control of the method and manner of the performance of the agent's business and not merely by control of the end results.

EPA concedes that many cases establish that dealers are not "general" agents of the manufacturer. But as-

sert, however, that these cases do not address the question of whether dealers were agents for the limited purpose of vehicle emissions related servicing. Virtually all of the cases holding that dealers were not agents involved either instances where dealers were being used to establish jurisdiction in suits against the manufacturer ("doing business" standard applied) or situations where the manufacturer was being sued in connection with the sale of dealership vehicles. In contrast, however, EPA alleges, the case law establishes that the dealers *are* agents of Chrysler for the purpose of emissions related servicing of Chrysler vehicles, which includes dealer preparation and warranty work.[15] I agree.

Courts have concluded that facts demonstrating a "right to control" the manner of performing the service work establish an agency relationship. *Yale & Towne, Inc.* v. *Sharpe*, 118 Ga. App. 480, 164 S.E. 2d 318, 323, 324 (Ga; Ct. App. 1968) found an agency relationship for the purpose of making repairs where the manufacturer "retained the control and manner of making repairs, conducted training programs for this purpose several times a year, [and] had the right to require the discharge of Ogden [dealership] employees for deficiencies in the service department, ..." The court did not examine whether Yale & Towne, Inc., controlled each aspect of the dealership operation, but found an agency relationship solely with regard to making repairs. Liability was based upon this narrowly defined agency. Similarly, *Jackson* v. *Standard Oil Co. of California*, 8 Wash. App. 83, 505 P.2d 139, 144 (Wash. Ct. App.

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[15] *Vernon* v. *Lake Motors*, 26 Utah 2d 269, 488 P.2d 302, 306 (Utah 1971) held the dealers are agents for the purpose of warranty work. *Ford Motor Co.* v. *Pittman*, 227 So. 2d 246, 250 (Fla. Dist. Ct. App. 1969) described the dealer as an agent of Ford where Ford "[relied] on the dealer as an predelivery service check."

1972) held that "It should be sufficient that plaintiff present substantial evidence of Standard's control or right of control over those activities from whence the actionable negligence flowed. If the rule were otherwise, then a person wishing to accomplish a certain result through another could declare the other to be an independent contractor generally, and yet retain control over a particularly hazardous part of the undertaking without incurring liability for acts arising out of that part. Such a result would effectively thwart the purpose of the rule of vicarious liability." *Accord, Texas* v. *Wheat*, 140 Tex. 468, 168 S.W. 2d 632, 635 (Tex. 1943). This court found that the oil company would be liable for the failure of its distributor to adhere to the company's safety practices, resulting in personal injury, if the jury found that the company controlled or had the right to control the training and operation of the distributor's employees in the safe handling of its products. A prima facie case of liability was established by the detailed safety procedures in the "Market Operating Manual," a requirement that the Manual must be read and understood and that the distributor maintain Standard's property in a "safe, efficient and presentable condition," and periodic inspections of the distributor by Standard.

Where a bus distributor negligently repaired the manufacturer's bus, and the distributor was not required to make repairs in accordance with the manufacturer's manual, nor were any training requirements imposed by the manufacturer, no agency relationship was found. *Quijada Corp.* v. *General Motors*, 253 A.2d 538, 541 (D.C. Ct. App. 1969). Therefore, based upon the above line of cases EPA alleges that Chrysler's control over the training of dealership service employees and the service procedures to be used by them rather than control over the entire dealership enterprise, creates a limited agency for the purpose of servicing vehicles and is sufficient to

attach liability to Chrysler for dealer service performance.

This right to control theory extends more explicitly to the performance of emission related services. Under the Chrysler dealership franchise agreements, the Chrysler dealers are required to perform pre-sale adjustments and inspections prior to delivery to the consumer. These procedures include inspection and adjustment of the emission systems of the vehicles, and particularly readjustment (if required) of the fuel/air mixture. These procedures are explicitly detailed in Chrysler's manual entitled "Predelivery Procedures", *EPA 12*, which is provided to all dealers. Dealers must adhere strictly to these detailed procedures and prepare inspection forms, *EPA 13A*, *13B*, which verify that all the work was properly performed.

Chrysler dealers are also required to provide certain prescribed warranty services at no cost to the customer in order to fulfill Chrysler's warranty obligations to the customer. The Direct Dealer Agreement, *EPA-11A*, requires that dealers provide to owners of Chrysler passenger cars "all warranty service to which they may be entitled under the terms of such warranty in accordance with the policies and procedures set forth in [Chrysler's] Warranty Policy and Procedure Manual and in bulletins and documents relating to warranty service that [Chrysler] may, from time to time, supply the Direct Dealers". The warranty services must be provided in accordance with the detailed service procedures set forth in Chrysler's service manual and its technical service bulletins. The Warranty Policy and Procedure Manual, *EPA-15*, and Warranty Bulletins contain an extensive compilation of some of the policies and procedures required in the administration of Chrysler's warranty obligations. The Warranty Policy and Procedure Manual provides that Chrysler has the right to observe, supervise or verify the performance of warranty repairs by Chrysler dealerships.

Chysler reserves the right to instruct dealership personnel in proper warranty service. These services include readjustment of the carburetor where required under the emission or general waranty.[16]

With regard to general emissions related servicing, Chrysler *requires* that dealers follow the Chrysler specified service procedures to adhere to the proper servicing requirement of the Direct Dealer Agreement. Numerous Chrysler communications to dealerships in the form of technical service bulletins, letters and training manuals remind the dealers and their mechanics to adhere strictly to the manufacturer's emissions related service procedures and Chrysler specifications.

Chrysler contends, however, that its dealers need not follow the procedures set out in its service manuals and technical service bulletins. It states that the dealer is "free to reject, follow or modify these recommended procedures."

EPA contends that this contention is completely contrary to the previously discussed contractual requirements. I agree. Chrysler provides a detailed procedures manual, an extensive training program and paragraph 7 of the dealership agreement explicitly requires that all recommended pre-delivery services be performed. Paragraph 7 also specifies that all warranty services *must* be performed in accordance with the Chrysler service manual and its technical service bulletins. The Warranty Manual

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[16] Under Sec. 207(a) of the Clean Air Act, Chrysler provides an emission warranty to owners that each "vehicle or engine is (1) designed, built, and equipped so as to conform at the time of sale with applicable regulations under Sec. 202, and (2) free from defects in materials and workmanship which cause such vehicle or engine to fail to conform with applicable regulations for its useful life (as determined under Sec. 202(d))."

gives Chrysler the right to observe and supervise the performance of warranty repairs. Mr. Hetherly, Chrysler's witness on the area of agency, agreed that pre-delivery services and warranty services must be performed in accordance with Chrysler's procedures. With regard to the specific idle adjustment procedure in this case, Chrysler has indicated on at least three occasions that the Chrysler specified procedure is the *only acceptable* procedure.

Additional controls on dealership servicing are present in the franchise agreement. Chrysler requires its dealers to "provide and maintain, for servicing [Chrysler] vehicles, adequate facilities equipped with the basic tools and equipment peculiar to [Chrysler] products and necessary for proper and efficient servicing and repairing of [Chrysler] cars." Chrysler service representatives monitor the adequacy of dealership facilities and tools and the training of dealership mechanics. Chrysler may terminate a dealer franchise with 90 days written notice on the failure of the dealer to perform fully any of its obligations regarding adequate facilities, pre-delivery services, warranty services.

Additional facts provide support for the contention that Chrysler has the right to control its dealers in emission control related servicing. Dealers are required to provide proper servicing of Chrysler vehicles. Secondly, as in the case of *Yale & Towne, supra*, Chrysler does conduct extensive training programs for dealership employees, which include programs in carburetor and emission control servicing. Thirdly, the manufacturer may require that dealership mechanics receive training in pre-delivery service, warranty service and general service, and may terminate a dealership for improper servicing due to a lack of training. The required training and the required procedures alone create an agency relationship under the case law. *Jackson* v. *Standard Oil*

Co. of California, supra; Yale & Towne, Inc. v. *Sharpe, supra.*

In summary, the above facts establish that Chrysler has the right to control dealership performance of pre-delivery and warranty services and all emissions related services. Since the "right to control" test is satisfied, Chrysler dealers are agents of Chrysler in the performance of these services.[17]

Furthermore, any failure by Chrysler to effectively exercise its control, which apparently occurred in this case, does not affect the agency status of the dealers. It is the "right to control," rather than the effective exercise of the authority that is determinative. *Quijada, supra* at 540; *Joiner* v. *Sinclair Refining Co.*, 48 Ga. App. 365, 172 S.E. 754, 755 (Ga. Ct. App. 1934). Chrysler's attempt to disclaim any agency relationship with the dealers or any degree of control over the dealers is also totally ineffective. Many courts have held that written disclaimers of agency or control will be ignored if the facts indicate otherwise. The relationship of the parties, as amplified by the operating manual, the na-

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[17] *Jackson* v. *Standard Oil Co. of California*, 8 Wash. 83, 505 P.2d 139, 144 (Wash. Ct. App. 1972); *Yale & Towne, Inc.* v. *Sharpe*, 118 Ga. App. 480, 164 E.2d [sic] 318, 323, 324 (Ga. Ct. App. 1968); *Vernon* v. *Lake Motors*, 26 Utah 2d 269, 488 P.2d 302, 306 (Utah 1971) (warranty service); *Fort* [sic] *Motor Co.* v. *Pittman*, 227 So.2d 246, 250 (Fla. Dist. Ct. App. 1969) (pre-delivery services); *Cf., Rager* v. *Superior Coach Sales and Service of Arizona*, 111 Ariz. 204, 526 P.2d 1056, 1063 (Ariz. 1974) (warranty service); *Quijada Corp.* v. *General Motors Corp.*, 253 A.2d 538, 540 (D.C. Ct. App. 1969); *Vandermark* v. *Ford Motor Co.*, 37 Cal. Rptr. 896, 391 P.2d 168 (Cal. 1964) (pre-delivery service); *Ford Motor Co.* v. *Poeschl*, 21 Cal. App. 3d 694, 98 Cal. Rptr. 702, 704 (Cal. Ct. App. 1971) (pre-delivery service); *Goodrich* v. *Ford Motor Co.*, 525 P.2d 130, 134 (Ore. 1974).

ture of the undertaking itself, and the amount of control actually exercised in performance of the undertaking are the determinative factors. *Jackson, supra* at 145; *accord, Pagarigan* v. *Phillips Petroleum Co.*, 552 P.2d 1065, 1068. (Wash. Ct. App. 1967)

EPA further contends that the manufacturer is responsible for misadjustments caused by dealers during servicing since the dealers are apparent agents of the manufacturer for the purpose of servicing the manufacturer's vehicles.

Apparent agency requires two elements: (1) a representation by the "principal" that a person is his agent and (2) justifiable reliance upon that representation by a third person. *Gizzi* v. *Texaco, Inc.*, 437 F.2d 308, 309 (3d Cir. 1971), *cert. denied*, 404 U.S. 829 (1971); *Apple* v. *Standard Oil*, 307 F. Supp. 107, 111 (N.D. Cal. 1969).

> "One who represents that another is his servant or other agent and thereby causes a third person justifiably to rely upon the care or skill of such apparent agent is subject to liability to the third person for harm caused by the lack of care or skill of the one appearing to be a servant or other agent as if he were such." RESTATEMENT (SECOND) OF AGENCY SEC. 267 (1958).

Chrysler dealerships are held out as the representatives of Chrysler for the purpose of servicing Chrysler vehicles.

The facts in this case support a finding that Chrysler dealers are held out by Chrysler and its dealers to be its agents, for the purposes of servicing the vehicles, including dealer preparation work, and that consumers do justifiably rely on these representations. Chrysler vehicles are sold at the Chrysler dealerships, the pre-delivery checks and adjustments are made by the dealers, and all

warranty work is performed by the dealers. Chrysler's owner's manual encourages owners to utilize Chrysler authorized dealerships for their service requirements. The owner's manual advises owners to speak to Chrysler service representatives regarding complaints on dealer servicing. The national advertising by Chrysler and the dealerships using the various Chrysler trade names adds to the association of Chrysler and its authorized dealers. Dealerships are encouraged to advertise by stressing the Chrysler affiliation and advantages of Chrysler affiliation, such as Chrysler training, parts, tools, and equipment.

Chrysler dealerships are also listed in the local phone books, identified by Chrysler emblems and signs, and benefit from Chrysler's nationwide advertising campaigns.

(1) Every vehicle owner possesses a manual which associates Chrysler and the dealerships for service purposes.

(2) The owner can only obtain the benefit of Chrysler training and expertise at these dealerships.

(3) The owner can only get warranty service free of charge at these dealerships.

(4) The owner is advised to forward dealership service complaints directly to Chrysler service personnel.

Therefore, the average owner has no reason to doubt that Chrysler authorized service facilities are representatives of Chrysler for servicing purposes.

Since the public reasonably relies on the dealers' skill and Chrysler's representations in servicing Chrysler cars, Chrysler is responsible for the carburetor misadjustments caused by its agents, the dealers, during the servicing of the vehicles. *Gizzi* v. *Texaco, Inc.*, 437 F.2d 308, 309 (3d Cir. 1971), *cert. denied*, 404 U.S. 829 (1971).

See also the case of *N.L.R.B.* v. *Sachs*, 503 F.2d 1229 (7th Cir. 1974) wherein it was held that the common law of agency is applicable in cases arising under the National Labor Relations Act. Here again, in a case holding that a relationship of "independent contractors" did not exist, the court in citing *Frito-Lay, Inc.* v. *N.L.R.B.*, 385 F.2d 180, 187 (7th Cir. 1967) stated:

> [2] Whether the Sachs brothers were "independent contractors" depends upon whether Peko and Sav-Co. had the right to control the way the brothers managed Phil's:
>
> > In determining the status of persons alleged to be independent contractors, the Act requires the application of the "right to control" test. Where the person for whom the services are performed retains the right to control the manner and means by which the result is to be accomplished, the relationship is one of employment. On the other hand, where control is reserved only as to the result sought the relationship is that of independent contractor. The resolution of this question depends upon the facts of each case and no one factor is determinative.

And further:

> It is, of course, the right to control and not the actual exercise of that right which is the decisive element. United Insurance Co. of America v. NLRB, 304 F.2d 86, 89 (7th Cir. 1962).

Contentions and allegations not specifically discussed herein have been considered and rejected.

D. *Findings of Fact*

1. Respondent Chrysler Corporation (Chrysler) is organized under the laws of the State of Delaware and is engaged in the manufacture and sale of new motor vehicles in the United States.

2. Chrysler submitted to the Administrator of the Environmental Protection Agency (EPA) an application for a Certificate of Conformity in order to manufacture and sell its 1975 model-year motor vehicles, pursuant to Title II of the Clean Air Act and the regulations thereunder.

3. On August 9, 1974, the Administrator of EPA issued a Certificate of Conformity to Respondent Chrysler for its F-LA2L-C engine family, including the 360 CID engines for use in various Plymouth, Dodge, and Chrysler vehicles. *C-89(a)*.

4. On August 12, 1974, the Administrator of EPA issued a Certificate of Conformity to Respondent Chrysler for its F-B2-C engine family, including the 400 CID engines for use in various Plymouth, Dodge, and Chrysler vehicles. *C-89(b)*.

5. The Certificate of Conformity states that it covers "only those new motor vehicles or new motor vehicle engines which conform, in all material respects, to the design specifications described in the application(s) for [these] certificates and which are produced during the 1975 model-year production period of said manufacturer. . . ."

6. During the production period for 1975 model-year vehicles, Respondent Chrysler manufactured and delivered into commerce approximately 150,000 Plymouth, Dodge, and Chrysler vehicles of the 360 CID engine family and approximately 58,000 Plymouth, Dodge, and Chrysler vehicles of the 400 CID engine family.

7. On December 8, 1976, the Administrator of EPA, pursuant to Sec. 207(c)(1) of the Clean Air Act, gave notice to Chrysler of his determination that a substantial number of properly maintained and used 1975 model vehicles of the 360 and 400 CID 2-barrel catalytic converter engine families manufactured by Chrysler were

in nonconformity with the Clean Air Act and ordered Chrysler to submit a plan for remedying the alleged nonconformity. *EPA-141.*

8. The notice of the Administrator further stated that EPA data indicated that carburetor idle CO misadjustment was the primary cause of the nonconformity of these vehicles.

9. On January 19, 1977, Chrysler Corporation, by letter addressed to the Administrator, pursuant to Sec. 207 (c) (1) of the Clean Air Act and EPA Regulations, 40 C.F.R. 85.1801 *et seq.*, requested a hearing to review the Administrator's determination.

10. The Administrator's recall order covered Chrysler's 1975 F-B2-C and F-LA2L-C, CII and CIII* engine families.

11. These vehicles represent Chrysler's 1975 models equipped with 360 and 400 CID 2-barrel carburetors.

12. The Administrator's order found that the identified Chrysler engine families were exceeding the 1975 Federal carbon monoxide standard of 15 grams per vehicle (gm/mi) mile.

13. This finding was based on data from State Inspection/Maintenance programs, EPA's MSED Surveys, EPA's Emission Factor Program, and EPA's confirmatory test program at Olson Laboratories.

Federal Test Procedure

14. The 1975 Federal emission standard for light duty vehicles (hereinafter "standard") is 15 grams per vehicle mile for carbon monoxide (CO).

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* There were no Certificates of Conformity received in evidence for engine families numbered F-LA2L-CII and CIII which were included in the Olson Test Program Contract Scope of Work. *EPA-62.*

15. The Federal Test Procedure (FTP) for measuring evaporative and exhaust emissions from light duty motor vehicles is set forth in 40 CFR 85.075-9 through 85.075-27.

Olson Test Program FTP Testing

16. Exhaust emission tests were conducted on 20 vehicles of the recall class (ten 360 CID and ten 400 CID vehicles) in the Olson Test Program in Livonia, Michigan. These measurements of exhaust emissions were conducted in accordance with the FTP.

Emission Factor Program FTP Testing

17. Exhaust emission measurements were conducted on 26 vehicles of the recall class (18 360 CID and 8 400 CID vehicles) in the Emission Factor Program in Phoenix, Arizona; Chicago, Illinois; Houston, Texas; St. Louis, Missouri, and Washington, D.C. The procedures for the emissions testing did not include procedures for measurement of evaporative emissions.

18. The deletion of the procedures for measuring evaporative emissions in the Emission Factor Program had no significant impact on the measurements of the exhaust emissions. The procedures for measuring exhaust emissions were in accordance with the FTP.

19. The test procedures in the Emission Factor Program were properly carried out and the tests were conducted in an accurate manner.

Olson Program and Emission Factor Program FTP Results

20. Ninety percent of the recall class vehicles tested in the Olson Program exceeded the standard (10 out of 10 for the 360 CID and 8 out of 10 for the 400 CID vehicles).

21. Average emissions of the 360 CID vehicles tested in the Olson Program was 69.0 gm/mi CO. The average emissions of the 400 CID vehicles was 33.6 gm/mi CO.

22. Eighty-five percent of the recall class vehicles tested in the Emission Factor Program exceeded the standard (15 out of 18 for the 360 CID and 7 out of 8 for the 400 CID).

23. The average emissions of the 360 CID vehicles tested in the Emission Factor Program was 48.0 gm/mi CO. The average emissions of the 400 CID vehicles tested was 49.4 gm/mi CO.

Projections of FTP Nonconformities Based on Olson and Emission Factor Programs

24. Based on the Olson Program and Emission Factor Program, which comprise tests on 46 recall class vehicles in six different locations, 93% of the 360 CID vehicles tested and 83% of the 400 CID vehicles tested exceeded the standard.

25. From these results, it can be projected with 95% confidence that not less than 79% of all 360 CID vehicles and not less than 62% of all 400 CID vehicles are exceeding the standard in use.

26. If only the results from the Olson Program are relied on, it can be projected with 95% confidence that not less than 79% of all [sic, 360?] CID vehicles and not less than 49% of all 400 CID vehicles are exceeding the standards in use.

27. The statistical techniques used in making projections from the Olson and Emission Factor Programs to the entire population of recall class vehicles are standard accepted techniques, done in the accepted statistical manner.

28. Measurements of idle CO concentration were taken at the tailpipe on 26 vehicles of the recall class in the

Portland, Oregon, I/M Program (19 360 CID and 7 400 CID vehicles). These measurements were conducted by state I/M personnel with calibrated and properly functioning idle CO analyzers and were accurate measurements of idle CO concentrations. Sixty-eight percent of the 360 CID vehicles tested had idle CO concentrations greater than 1.0% and 71% of the 400 CID vehicles tested had idle CO concentrations greater than 1.0%, which is the equivalent of approximately 17 gm/mi.

29. Measurements of idle CO concentration were taken at the tailpipe on 30 vehicles of the recall class (28 360 CID vehicles and 2 400 CID vehicles) during the MSED Tampering Survey in the Cincinnati, Chicago, and New Jersey I/M programs. The measurements were conducted by state I/M personnel and EPA contractors and were accurate measurements using calibrated, properly functioning idle CO infrared analyzers. Sixty-four percent of the 360 CID vehicles and 50% of the 400 CID vehicles had idle CO concentrations greater than 1.0%.

30. Measurements of idle CO concentration were taken at the tailpipe on 18 vehicles of the recall class (11 360 CID vehicles and 7 400 CID vehicles) in Washington, D.C., in the MSED New Car Survey. These measurements were taken by EPA personnel and were accurate measurements using a calibrated and properly functioning idle CO infrared analyzer. Seventy-three percent of the 360 CID vehicles and 71% of the 400 CID vehicles had idle CO concentrations greater than 1.0%. The vehicles were recently purchased vehicles obtained from a list of owners provided by Chrysler to EPA. Any engine maintenance performed on these vehicles had been performed exclusively by Chrysler dealerships.

31. Measurements of idle CO concentration were taken at the tailpipe on 26 vehicles of the recall class (18 360 CID vehicles and 8 400 CID vehicles) in the Emission Factor Program in Phoenix, Chicago, Houston, St. Louis,

and Washington, D.C. These measurements were conducted under laboratory conditions. Seventy-eight percent of the 360 CID vehicles and 63% of the 400 CID vehicles had idle CO concentrations greater than 1.0%.

32. Measurements of idle CO concentration were taken at the tailpipe on 20 vehicles of the recall class (10 360 CID vehicles and 10 400 CID vehicles) in the Olson Program in Livonia, Michigan. These measurements were conducted under laboratory conditions. One hundred percent of the 360 CID vehicles and 50% of the 400 CID vehicles had idle CO concentrations greater than 1.0%.

33. Measurements of idle CO concentration taken at the tailpipe in the Short Test during state I/M programs, MSED Tampering Survey, and MSED New Car Survey, while indicating that some recall class vehicles exceed 1.0% idle CO concentration, may not be used to correlate to an FTP failure for those same vehicles for lack of the establishment by EPA of a cut point for the recall class vehicles and, likewise, such data may not be used to support the Sec. 207(c)(1) criterion of "substantial number" since no "cutpoint" has been established upon which to base such a correlation.

34. The Short Test Data of the State I/M Programs, MSED New Car and Tampering Surveys do provide a basis upon which to conclude that a problem does exist nationwide with excessive emissions in recall class vehicles upon which the Administrator may conclude that an investigation is warranted.

35. The projections made from the results of the Olson and Emission Factor Programs are valid projections based on a representative sample of recall class vehicles.

36. The Emission Factor and Olson Program data, in the absence of any data to the contrary, demonstrate that a substantial number of all recall class vehicles in use are not in conformity with standard.

37. Based on the sampling procedures, and review of all available information and data, in the Emission Factor and Olson Programs, no significant bias towards higher emissions was introduced into the results.

38. There were no biases in emissions measurements caused by the geographical locations in which the vehicles were tested.

39. The primary cause of the failure of a substantial number of recall class vehicles tested in the Olson and Emission Factor Programs to meet the standard is a condition of overly rich idle air-fuel mixtures.

40. The primary cause of the overly rich idle air-fuel mixtures in a substantial number of recall class vehicles, in the Olson and Emission Factor Programs, is a condition of misadjustment of the idle mixture.

41. The primary cause of a substantial number of recall class vehicles in nonconformity with the standard in use is a condition of misadjustment of idle mixture.

42. Chrysler sets forth instructions for the maintenance and use of Chrysler recall class vehicles in the Owner's Manual.

43. The maintenance instructions set forth in the Owner's Manual instruct the owner as to the items that should be maintained and the intervals at which such maintenance should be performed.

44. The only scheduled maintenance instruction in the Owner's Manual which is relevant to the cause or prevention of a condition of idle mixture misadjustment is the one which reads:

> "Ignition, Timing, Idle Speed, Idle Mixture, Check and Adjust as Required at 15,000, 30,000 and 45,000 miles."

45. A vehicle owner, in bringing his vehicle to a Chrysler dealership or other bona fide service facility at the relevant maintenance intervals specified by Chrysler, or at any time for unscheduled maintenance when driveability or performance problems are apparent, is justified in assuming that such dealership or service facility will correctly perform service and maintenance operations on his vehicle.

46. Of the 46 recall class vehicles tested in the Olson and Emission Factor Programs, 37 had not yet reached the 15,000 mile scheduled maintenance interval and therefore had not reached any relevant maintenance intervals.

47. The 37 vehicles under 15,000 miles were properly maintained by owners.

48. Of the 46 recall class vehicles tested in the Olson and Emission Factor Programs, nine exceeded the 15,000 mile point and therefore had reached the scheduled relevant maintenance interval requiring idle mixture check and adjustment as required by the Owner's Manual.

49. Owners of nine vehicles over 15,000 miles indicated that they had brought their vehicles in to bona fide service organizations for service at the required 15,000 mile interval. Such action in and of itself does not justify the conclusion that the vehicles were properly maintained.

50. Of the 18 recall class vehicles tested in the MSED New Car Survey, none exceeded 15,000 miles and therefore had not reached any relevant maintenance intervals. In the absence of evidence to the contrary these vehicles were properly maintained.

51. Of the 26 recall class vehicles tested in the Portland I/M Program, none exceeded 15,000 miles and therefore had not reached any relevant maintenance intervals. In the absence of evidence to the contrary these vehicles were properly maintained.

52. Of the 30 vehicles tested in the MSED Tampering Survey, 18 were under 15,000 miles and therefore had not reached any relevant maintenance interval. In the absence of evidence to the contrary these vehicles were properly maintained.

53. The only recommendation concerning vehicle use specified in Chrysler's owners manual which is relevant to the cause or prevention of overly rich idle mixture is the recommendation to use unleaded fuel.

54. The owners of the vehicles tested in the Olson and Emission Factor Programs indicated that the vehicles were operated on unleaded fuel; therefore, the vehicles were properly used.

55. Recall class vehicles are designed to only accept unleaded fuel dispensing nozzles which are smaller in diameter than leaded fuel dispensing nozzles. Labels informing the owner to use unleaded fuel are located on the instrument panel and adjacent to the fuel filler cap or door.

56. Federal regulations prohibit the dispensing by a retail service station of leaded fuel into a vehicle labeled "unleaded gasoline only."

57. In light of the design features on the vehicles which prevent the vehicles' accepting leaded fuel nozzles, the legal proscriptions against dispensing leaded gasoline and the data in the Emission Factor Program and Olson Program indicating the use of unleaded fuel, the vehicles tested in the Portland, Oregon, I/M, MSED Tampering Survey, and MSED New Car Survey were operated with unleaded fuel and were properly used.

58. Chrysler audits very few vehicles for proper adjustment prior to shipment to dealerships.

59. Data submitted by Chrysler to EPA on Chrysler recall class production vehicles indicate that of 67 360

CID vehicles tested, 46% were in a condition of misadjustment and 27% exceeded 1.0% idle CO. Of 78 400 CID vehicles tested, 27% were in a condition of misadjustment and 17% exceeded 1.0% idle CO.

60. Data submitted by Chrysler to EPA indicate that of 48 360 CID vehicles tested by Chrysler at Chrysler's new car preparation center in Chicago, 33% were misadjusted and 27% were in excess of 1.0% idle CO. Of 38 400 CID vehicles tested, 18% were misadjusted and all 18% were in excess of 1.0% idle CO.

61. The data indicate that a significant percentage of recall class cars are misadjusted at the factory and/or at Chrysler's new car preparation centers prior to delivery to the owners.

62. Data submitted to EPA by Chrysler indicate that of 29 recall class vehicles tested at five Chrysler dealerships in Chicago, 28% were at or exceeded 1.0% idle CO.

63. Data recorded by EPA in the MSED New Car Survey indicate that 10 recall class vehicles had not been returned for any engine maintenance and were therefore tested in the condition of idle mixture adjustment as delivered by dealerships to the owners. Ninety percent were misadjusted with an average idle CO concentration of 3.2%.

64. Of the 36 vehicles tested in the Emission Factor Program and Olson Program which were in a condition of misadjustment for idle CO, nine had not had any idle mixture related maintenance performed on their vehicles prior to the EPA test. These nine vehicles were either misadjusted during assembly or during predelivery maintenance at Chrysler dealerships.

65. The data from Chrysler, the MSED New Car Survey, and the Emission Factor and Olson Programs

indicate that a significant number of recall class vehicles are misadjusted during assembly and calibration and/or at Chrysler dealerships.

66. Of the eight vehicles tested in the MSED New Car Survey which had been returned exclusively to dealerships for engine warranty work, after sale to the owners, 50% were in a condition of misadjustment.

67. Of the 36 vehicles tested in the Emission Factor and Olson Programs which were in a condition of misadjustment for idle mixture, 27 had been returned for carburetor-related maintenance. Of those 27 vehicles, 25 had been maintained exclusively by Chrysler dealerships.

68. The only procedure for adjusting idle mixture specified by Chrysler for recall class vehicles requires the use of a properly functioning and calibrated Exhaust CO Infrared Analyzer attached to the tap upstream of the catalyst.

69. As of September, 1975 only 43.6% of Chrysler dealerships had infrared CO analyzers which were specified by Chrysler for use in setting emissions to Chrysler's specifications.

70. Chrysler's own survey indicates that of 39 dealerships in the Chicago area, a significant number of exhaust CO analyzers have leaks in the sampling systems large enough to cause incorrect idle CO readings and/or are not calibrated.

71. Chrysler's own survey indicates that most of Chrysler's dealers do not use the upstream tap for adjustment.

72. When Chrysler's recommended procedure for idle mixture adjustment is not used, or if it is used with an improperly functioning or miscalibrated analyzer, it is unlikely that the idle mixture would be adjusted to Chrysler's specification.

73. Of 27 dealerships surveyed in Houston and Chicago by EPA, 16 indicated that an alternate procedure of idle adjustment is used instead of Chrysler's procedure, 12 indicated that they do not use the upstream tap for adjusting the carburetor and 5 indicated that they sometimes use the upstream tap.

74. Chrysler requires its dealers to perform all pre-delivery and make-ready services in accordance with the detailed specifications outlined in the Customer Assurance manual entitled "Pre-Delivery Procedures" which includes adjustments to idle mixture screws to conform to emission standards.

75. Dealers are required to complete pre-delivery inspection forms to indicate that the new vehicle preparation procedures have been performed.

76. Chrysler offers an extensive pre-delivery training program including carburetor adjustment emission control and may require mechanics performing such service to receive such training.

77. Chrysler employees review the performance of the new vehicle preparation procedures as part of the Dealer Parts and Service Evaluation Guide.

78. Chrysler provides two warranties to vehicle owners: a basic vehicle warranty (12,000 miles/12 months) and an emissions warranty required by the Clean Air Act (5 years/50,000 miles).

79. Chrysler requires its dealers to provide warranty service to the owners of Chrysler vehicles in accordance with the policies and procedures set forth in the Warranty Policy and Procedure Manual.

80. Chrysler dealers perform the warranty services to meet Chrysler's warranty obligations and Chrysler reimburses the dealers for the services performed in accordance with its policies and procedures.

81. Chrysler reserves the right to instruct dealer personnel in proper warranty service.

82. The performance of warranty service under the emission or basic warranties may include adjustment of the idle mixture setting.

83. Chrysler requires its dealers to provide and maintain, for servicing Chrysler vehicles, adequate facilities equipped with the basic tools common to the trade and with special tools and equipment peculiar to Chrysler products and necessary for properly and efficiently servicing and repairing Chrysler cars.

84. Chrysler requires that dealers follow the emissions related servicing procedures to adhere to the proper servicing requirement of the Direct Dealer Agreement.

85. Chrysler may terminate a dealership with 90 days notice for the failure of the dealer to perform fully any of its obligations regarding adequate facilities, predelivery services, warranty services or general services.

86. Chrysler may terminate a dealership for inadequate servicing caused by a lack of training.

87. Chrysler and its authorized dealers, at the direction of Chrysler, hold out the dealerships as representatives of Chrysler to Chrysler vehicle owners for the purpose of providing service, including emissions related service, for Chrysler vehicles.

88. Of 27 mechanics surveyed in Houston and Chicago, 15 mechanics stated it was not possible to achieve acceptable engine smoothness and driveability when adjusting according to Chrysler's procedure and specification and six mechanics stated that it was not possible all of the time.

89. Vehicles of the recall class experience rough engine idling with the air conditioners on which would

cause owners to return vehicles to dealerships for correction.

90. In the Olson and Emission Factor Programs, 58% of owners contacted indicated that problems in driveability and idle roughness had been observed on their vehicles and 43% of the owners stated that they had returned their vehicles for service to correct the problems.

91. Warranty records indicate that 55% of the vehicles tested in the Olson and Emission Factor Programs were returned for warranty repairs or unscheduled maintenance relating to carburetor or tune-ups.

92. Chrysler carburetor warranty repair records indicate that 144,891 warranty claims were submitted with respect to the carburetor, indicating that a large percentage of vehicles were returned during warranty period (12 months/12,000 miles) for repairs.

93. Mechanics are motivated to misadjust vehicles because use of Chrysler's procedure results in unacceptable idle quality causing the customer to return.

94. One method of improving driveability and idle quality is to adjust the idle mixture to a setting richer than Chrysler's specification.

95. The idle mixture adjustment range of recall class vehicles permits adjustment up to 8.0% idle CO with best idle quality occurring between 5.0 and 8.0% idle CO at the tailpipe.

96. Chrysler's idle mixture adjustment specification is 0.3% idle CO measured upstream of the catalyst.

97. At idle CO concentrations in excess of 1.0% CO, the ability of the catalyst to function is impaired because the overly rich fuel-air mixture causes an insufficiency of oxygen.

98. The catalyst is the primary device relied on by Chrysler to enable recall class vehicles to meet the 1975 Federal emissions standards for CO.

99. In light of the operational dependency of catalytic converters on the precise lean adjustment to specification, Chrysler's design of the recall class vehicles is defective in not providing a means to limit the idle CO concentration which could result from idle mixture misadjustment.

100. Chrysler did not consider the impact on catalyst efficiency of a mixture setting above Chrysler's idle CO adjustment specification of 0.3% CO when designing the carburetor.

101. The only means of limiting the idle mixture adjustment provided on recall class vehicles was the installation of external limiter caps on the idle mixture screws.

102. The limiter caps installed by Chrysler on recall class vehicles are deficient in limiting the range of idle CO adjustment because the limiter caps are placed so as to permit adjustment beyond Chrysler's 0.3% idle CO specification up to 2.5% idle CO with measurements taken at the catalyst tap.

103. At the time the recall class vehicles were designed and produced, Chrysler was aware of the fact that within the constraints of the limiter caps, the idle mixture could be adjusted to a point that would cause the catalyst to cease functioning.

104. The placement of limiter caps by other major domestic manufacturers did not permit the adjustment screws to be adjusted beyond the manufacturer's adjustment point or specification.

105. Air pumps provide sufficient oxygen to allow the catalyst to function at peak efficiency when the idle mix-

ture is misadjusted to an overly righ fuel-air mixture and thereby limits the maximum idle CO concentration at the tailpipe regardless of the adjustment of the mixture screws.

106. Chrysler did not use air pumps on catalyst-equipped recall class vehicles.

107. Chrysler did use air pumps on catalyst-equipped vehicles manufactured for California in 1975 which met that state's more stringent emission standard.

108. Chrysler manufactured vehicles in 1966-1968 which implemented designs to limit the maximum idle CO concentration by means of internal idle mixture circuit calibrations.

109. Chrysler discontinued the 1968 internal limiter designs and decided to use external limiter caps and performed no further development work on designs to internally limit idle CO concentrations in the years 1972-1975.

110. Tests by EPA on two in-use 1968 model year vehicles with two of Chrysler's 1968 idle-limiting devices demonstrated that the designs were still effective in 1977 in limiting idle CO concentrations below 1.5% CO at the tailpipe with no manifest driveability or idle quality problems.

111. The tip angle of the mixture screw in recall class vehicles is 25 degrees as opposed to the tip angles of screws used by the other major domestic manufacturers in 1975 of between 12 and 15 degrees.

112. Chrysler used designs with 12 degrees tip angles in 1968-1970.

113. A larger tip angle increases sensitivity of vehicle idle CO response to mixture screw turns.

114. There were no technical reasons which precluded use of reduced tip angles on recall class vehicles.

115. Information and data were available in the years 1966-1974 and at the time the recall class vehicles were designed and produced, which indicated that misadjustments of idle mixtures were prevalent on vehicles in use and that limitations on the range of idle mixture were needed in order to assure compliance with emissions standards.

116. The Federal emission standard for CO was lowered from 39 grams per vehicle mile in 1974 to 15 grams per vehicle mile in 1975.

117. At the time recall class vehicles were designed and produced, Chrysler was aware that misadjustments of idle mixture within the ranges permitted by Chrysler's design of the idle mixture circuit would cause the vehicles to exceed the standard.

118. Chrysler testing of catalyst prototype vehicles in early 1974, prior to production of recall class vehicles, showed the existence of a carburetor misadjustment problem at low mileages in use and demonstrated the extreme effect of these misadjustments on CO emissions from catalyst equipped vehicles in the absence of air pumps.

119. Chrysler failed to implement available technology to limit idle adjustment range by means of air pumps.

120. Chrysler failed to implement available technology to limit idle adjustment range by means of internal limiting devices or calibrations.

121. Chrysler failed to implement available technology to reduce sensitivity of vehicle idle CO response by specifying a reduced tip angle.

122. Chrysler failed to place limiter caps so as to preclude adjustment richer than Chrysler's specification.

123. Chrysler failed to conduct any evaluations of the availability, use and state of repair of exhaust analyzers at dealerships and at non-dealerships prior to recommending the use of the analyzer as the only procedure for correct idle mixture adjustments.

124. Chrysler failed to adequately enforce the provisions under paragraph 7(b) of the Direct Dealer Agreement requiring a dealer to perform service on vehicles, including recall class vehicles, in accordance with procedures specified in Chrysler service manuals.

125. Chrysler failed to reimburse dealers for idle mixture adjustments on recall class vehicles as part of other carburetor adjustments or repairs performed under warranty.

126. Chrysler failed to adequately enforce the provisions of paragraph 7(b) of the Direct Dealer Agreement requiring its dealers to perform all Pre-delivery Services in accordance with procedures set forth in the "Pre-delivery Procedures" manual.

ORDER

Findings having been made that a substantial number of vehicles in Chrysler's 1975 F-B2-C and F-LA2L-C, CII, and CIII engine families (comprised of vehicles equipped with 360 and 400 cubic inch displacement (CID), 2 barrel carburetors and catalytic converters) do not conform to the 1975 Federal emission standard of 15 grams per vehicle mile for carbon monoxide (CO), (40 CFR 85.075-1(a)(ii)(b)), although properly maintained and used, when in actual use throughout their useful life, it is hereby ordered that Chrysler Corporation submit a plan for remedying the nonconformity to the Administrator in accordance with 40 CFR 85.1803 within 30 days from the date of this order.

/s/ Edward B. Finch
EDWARD B. FINCH
Administrative Law Judge

February 10, 1978

APPENDIX D

UNITED STATES COURT OF APPEALS FOR THE DISTRICT OF COLUMBIA

September Term, 1979

No. 78-2273

[Filed June 19, 1980]

CHRYSLER CORPORATION,
Petitioner

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY and DOUGLAS M. COSTLE, ADMINISTRATOR,
Respondents

APPEAL FROM AN ORDER OF THE ADMINISTRATOR OF THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Before: WRIGHT, Chief Judge, and McGOWAN and MIKVA, Circuit Judges

JUDGMENT

This cause came on to be heard on the appeal from an order of the Administrator of the United States Environmental Protection Agency and was argued by counsel. On consideration of the foregoing, it is

ORDERED AND ADJUDGED by this Court, that the order of the United States Environmental Protection

Agency under review is hereby affirmed, in accordance with the opinion of this Court filed herein this date.

Per Curiam

For the Court

/s/ George A. Fisher
GEORGE A. FISHER
Clerk

Date: June 19, 1980

Opinion for the Court filed by Chief Judge Wright

APPENDIX E

Clean Air Act § 202, 42 U.S.C. § 1857f-1 (1976 (*now* 42 U.S.C. § 7521).

§ 1857f-1. Establishment of standards

(a) Air pollutant emissions

Except as otherwise provided in subsection (b) of this section—

(1) The Administrator shall by regulation prescribe (and from time to time revise) in accordance with the provisions of this section, standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgment causes or contributes to, or is likely to cause or to contribute to, air pollution which endangers the public health or welfare. Such standards shall be applicable to such vehicles and engines for their useful life (as determined under subsection (d) of this section), whether such vehicles and engines are designed as complete systems or incorporated devices to prevent or control such pollution.

(2) Any regulation prescribed under this subsection (and any revision thereof) shall take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period.

(b) Reduction requirements for model years 1975 to 1978; promulgation; report to Congress; suspension of standards; interim standards.

(1)(A) The regulations under subsection (a) of this section applicable to emissions of carbon monoxide and hydrocarbons from light-duty vehicles and engines manufactured during model years 1975 and 1976 shall con-

tain standards which are identical to the interim standards which were prescribed (as of December 1, 1973) under paragraph (5) (A) of this subsection for light-duty vehicles and engines manufactured during model year 1975. The regulations under subsection (a) of this section applicable to emissions of carbon monoxide and hydrocarbons from light duty vehicles and engines manufactured during or after model year 1977 shall contain standards which require a reduction of at least 90 per centum from emissions of carbon monoxide and hydrocarbons allowable under the standards under this section applicable to light duty vehicles and engines manufactured in model year 1970.

(B) The regulations under subsection (a) of this section applicable to emissions of oxides of nitrogen from light-duty vehicles and engines manufactured during model years 1975 and 1976 shall contain standards which are identical to the standards which were prescribed (as of December 1, 1973) under subsection (a) of this section for light-duty vehicles and engines manufactured during model year 1975. The regulations under subsection (a) of this section applicable to emissions of oxides of nitrogen from light-duty vehicles and engines manufactured during model year 1977 shall contain standards which provide that such emissions from such vehicles and engines may not exceed 2.0 grams per vehicle mile. The regulations under subsection (a) of this section applicable to emissions of oxides of nitrogen from light duty vehicles and engines manufactured during or after model year 1978 shall contain standards which require a reduction of at least 90 per centum from the average of emissions of oxides of nitrogen actually measured from light duty vehicles manufactured during model year 1971 which are not subject to any Federal or State emission standard for oxides of nitrogen. Such average of emissions shall be determined by the Administrator on the basis of measurements made by him.

(2) Emission standards under paragraph (1), and measurement techniques on which such standards are based (if not promulgated prior to December 31, 1970), shall be prescribed by regulation within 180 days after such date.

(3) For purposes of this part—

(A) (i) The term "model year" with reference to any specific calendar year means the manufacturer's annual production period (as determined by the Administrator) which includes January 1 of such calendar year. If the manufacturer has no annual production period, the term "model year" shall mean the calendar year.

(ii) For the purpose of assuring that vehicles and engines manufactured before the beginning of a model year were not manufactured for purposes of circumventing the effective date of a standard required to be prescribed by subsection (b) of this section, the Administrator may prescribe regulations defining "model year" otherwise than as provided in clause (i).

(B) The term "light duty vehicles and engines" means new light duty motor vehicles and new light duty motor vehicle engines, as determined under regulations of the Administrator.

(4) On July 1 of 1971, and of each year thereafter, the Administrator shall report to the Congress with respect to the development of systems necessary to implement the emission standards established pursuant to this section. Such reports shall include information regarding the continuing effects of such air pollutants subject to standards under this section on the public health and welfare, the extent and progress of efforts being made to develop the necessary systems, the costs associated with development and application of such systems, and follow-

ing such hearings as he may deem advisable, any recommendations for additional congressional action necessary to achieve the purposes of this chapter. In gathering information for the purposes of this paragraph and in connection with any hearing, the provisions of section 1857h-5(a) of this title (relating to subpenas [sic]) shall apply.

(5) (A) At any time after January 1, 1975, any manufacturer may file with the Administrator an application requesting the suspension for one year only of the effective date of any emission standard required by paragraph (1) (A) with respect to such manufacturer for light-duty vehicles and engines manufactured in model year 1977. The Administrator shall make his determination with respect to any such application within sixty days. If he determines, in accordance with the provisions of this subsection, that such suspension should be granted, he shall simultaneously with such determination prescribe by regulation interim emission standards which shall apply (in lieu of the standards required to be prescribed by paragraph (1) (A) of this subsection) to emissions of carbon monoxide or hydrocarbons (or both) from such vehicles and engines manufactured during model year 1977.

(B) Any interim standards prescribed under this paragraph shall reflect the greatest degree of emission control which is achievable by application of technology which the Administrator determines is available, giving appropriate consideration to the cost of applying such technology within the period of time available to manufacturers.

(C) Within 60 days after receipt of the application for any such suspension, and after public hearing, the Administrator shall issue a decision granting or refusing such suspension. The Administrator shall grant such suspension only if he determines that (i) such suspension is essential to the public interest or the public health

and welfare of the United States, (ii) all good faith efforts have been made to meet the standards established by this subsection, (iii) the applicant has established that effective control technology, processes, operating methods, or other alternatives are not available or have not been available for a sufficient period of time to achieve compliance prior to the effective date of such standards, and (iv) the study and investigation of the National Academy of Sciences conducted pursuant to subsection (c) of this section and other information available to him has not indicated that technology, processes, or other alternatives are available to meet such standards.

(D) Nothing in this paragraph shall extend the effective date of any emission standard required to be prescribed under this subsection for more than one year.

(c) Feasibility study and investigation by National Academy of Sciences; reports to Administrator and Congress; availability of information

(1) The Administrator shall undertake to enter into appropriate arrangements with the National Academy of Sciences to conduct a comprehensive study and investigation of the technological feasibility of meeting the emissions standards required to be prescribed by the Administrator by subsection (b) of this section.

(2) Of the funds authorized to be appropriated to the Administrator by this chapter, such amounts as are required shall be available to carry out the study and investigation authorized by paragraph (1) of this subsection.

(3) In entering into any arrangement with the National Academy of Sciences for conducting the study and investigation authorized by paragraph (1) of this subsection, the Administrator shall request the National Academy of Sciences to submit semiannual reports on the progress of its study and investigation to the Ad-

ministrator and the Congress, beginning not later than July 1, 1971, and continuing until such study and investigation is completed.

(4) The Administrator shall furnish to such Academy at its request any information which the Academy deems necessary for the purpose of conducting the investigation and study authorized by paragraph (1) of this subsection. For the purpose of furnishing such information, the Administrator may use any authority he has under this chapter (A) to obtain information from any person, and (B) to require such person to conduct such tests, keep such records, and make such reports respecting research or other activities conducted by such person as may be reasonably necessary to carry out this subsection.

(d) Useful life of vehicles

The Administrator shall prescribe regulations under which the useful life of vehicles and engines shall be determined for purposes of subsection (a)(1) of this section and section 1857f-5a of this title. Such regulations shall provide that useful life shall—

(1) in the case of light duty vehicles and light duty vehicle engines, be a period of use of five years or fifty thousand miles (or the equivalent), whichever first occurs; and

(2) in the case of any other motor vehicle or motor vehicle engine, be a period of use set forth in paragraph (1) unless the Administrator determines that a period of use of greater duration or mileage is appropriate.

(e) New power sources or propulsion systems

In the event of a new power source or propulsion system for new motor vehicles or new motor vehicle engines is submitted for certification pursuant to section 1857f-5(a) of this title, the Administrator may postpone cer-

tification until he has prescribed standards for any air pollutants emitted by such vehicle or engine which cause or contribute to, or are likely to cause or contribute to, air pollution which endangers the public health or welfare but for which standards have not been prescribed under subsection (a) of this section.

Clean Air Act § 203, 42 U.S.C. § 1857f-2 (1976) (*now* 42 U.S.C. § 7522)

§ 1857f-2. Prohibited acts

(a) Manufacture, sale, or importation of vehicles or engines not in conformity with regulations; failure to make reports or provide information; removal of devices installed in conformity with regulations; prohibited sale or lease of vehicles or engines

The following acts and the causing thereof are prohibited—

(1) in the case of a manufacturer of new motor vehicles or new motor vehicle engines for distribution in commerce, the sale or the offering for sale, or the introduction, or delivery for introduction, into commerce, or (in the case of any person, except as provided by regulation of the Administrator), the importation into the United States of any new motor vehicle or new motor vehicle engine, manufactured after the effective date of regulations under this part which are applicable to such vehicle or engine unless such vehicle or engine is covered by a certificate of conformity issued (and in effect) under regulations prescribed under this part (except as provided in subsection (b) of this section);

(2) for any person to fail or refuse to permit access to or copying of records or to fail to make reports or provide information, required under section 1857f-6 of this title;

(3) for any person to remove or render inoperative any device or element of design installed on or in a motor vehicle or motor vehicle engine in compliance with regulations under this subchapter prior to its sale and delivery to the ultimate purchaser, or for any manufacturer or dealer knowingly to remove or render inoperative any such device or element of design after such sale and delivery to the ultimate purchaser; or

(4) for any manufacturer of a new motor vehicle or new motor vehicle engine subject to standards prescribed under section 1857f-1 of this title—

(A) to sell or lease any such vehicle or engine unless such manufacturer has compiled [sic] with the requirements of section 1857f-5a (a) and (b) of this title with respect to such vehicle or engine, and unless a label or tag is affixed to such vehicle or engine in accordance with section 1857f-5a(c)(3) of this title, or

(B) to fail or refuse to comply with the requirements of section 1857f-5a(c) or (e) of this title.

(b) Authority of Administrator to make exemptions; refusal to admit vehicle or engine into United States; vehicles or engines intended for export

(1) The Administrator may exempt any new motor vehicle or new motor vehicle engine, from subsection (a) of this section, upon such terms and conditions as he may find necessary for the purpose of research, investigations, studies, demonstrations, or training, or for reasons of national security.

(2) A new motor vehicle or new motor vehicle engine offered for importation or imported by any person in violation of subsection (a) of this section shall be re-

fused admission into the United States, but the Secretary of the Treasury and the Administrator may, by joint regulation, provide for deferring final determination as to admission and authorizing the delivery of such a motor vehicle or engine offered for import to the owner or consignee thereof upon such terms and conditions (including the furnishing of a bond) as may appear to them appropriate to insure that any such motor vehicle or engine will be brought into conformity with the standards, requirements, and limitations applicable to it under this part. The Secretary of the Treasury shall, if a motor vehicle or engine is finally refused admission under this paragraph, cause disposition thereof in accordance with the customs laws unless it is exported, under regulations prescribed by such Secretary, within ninety days of the date of notice of such refusal or such additional time as may be permitted pursuant to such regulations, except that disposition in accordance with the customs laws may not be made in such manner as may result, directly or indirectly, in the sale, to the ultimate consumer, of a new motor vehicle or new motor vehicle engine that fails to comply with applicable standards of the Administrator under this part.

(3) A new motor vehicle or new motor vehicle engine intended solely for export, and so labeled or tagged on the outside of the container and on the vehicle or engine itself, shall be subject to the provisions of subsection (a) of this section, except that if the country of export has emission standards which differ from the standards prescribed under subsection (a) of this section, then such vehicle or engine shall comply with the standards of such country of export.

(c) Exemptions; annual report of exemptions to Congress

Upon application therefore, the Administrator may exempt from subsection (a)(3) of this section any vehicles (or class thereof) manufactured before the 1974

model year from subsection (a)(3) of this section[1] for the purpose of permitting modifications to the emission control device or system of such vehicle in order to use fuels other than those specified in certification testing under section 1857f-5(a)(1) of this title, if the Administrator, on the basis of information submitted by the applicant, finds that such modification will not result in such vehicle or engine not complying with standards under section 1857f-1 of this title applicable to such vehicle or engine. Any such exemption shall identify (1) the vehicle or vehicles so exempted, (2) the specific nature of the modification, and (3) the person or class of persons to whom the exemption shall apply.

Clean Air Act § 204, 42 U.S.C. § 1857f-3 (1976) (*now* 42 U.S.C. § 7523)

§ 1857f-3. Jurisdiction of district court to restrain violations; actions brought by or in name of United States; territorial scope of subpenas [sic] for witnesses

(a) The district courts of the United States shall have jurisdiction to restrain violations of paragraph (1), (2), (3), or (4) of section 1857f-2(a) of this title.

(b) Actions to restrain such violations shall be brought by and in the name of the United States. In any such action, subpenas [sic] for witnesses who are required to attend a district court in any district may run into any other district.

Clean Air Act § 204, 42 U.S.C. § 1857f-3 (1976) (*now* 42 U.S.C. § 7524)

§ 1857f-4. Penalties for violations; separate offences [sic]

Any person who violates paragraph (1), (2), (3), or (4) of section 1857f-2(a) of this title shall be subject to a civil penalty of not more than $10,000. Any such violation with respect to paragraph (1), (2), or (4) of section 1857f-2(a) of this title shall constitute a separate

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[1] So in original.

offense with respect to each motor vehicle or motor vehicle engine.

Clean Air Act § 206, 42 U.S.C. § 1857f-5 (1976) (*now* 42 U.S.C. § 7525)

§ 1857f-5. Motor vehicle and motor vehicle engine compliance testing and certification

(a) Testing and issuance of certificate of conformity

(1) The Administrator shall test, or require to be tested in such manner as he deems appropriate, any new motor vehicle or new motor vehicle engine submitted by a manufacturer to determine whether such vehicle or engine conforms with the regulations prescribed under section 1857f-1 of this title. If such vehicle or engine conforms to such regulations, the Administrator shall issue a certificate of conformity upon such terms, and for such period (not in excess of one year), as he may prescribe.

(2) The Administrator shall test any emission control system incorporated in a motor vehicle or motor vehicle engine submitted to him by any person, in order to determine whether such system enables such vehicle or engine to conform to the standards required to be prescribed under section 1857f-1(b) of this title. If the Administrator finds on the basis of such tests that such vehicle or engine conforms to such standards, the Administrator shall issue a verification of compliance with emission standards for such system when incorporated in vehicles of a class of which the tested vehicle is representative. He shall inform manufacturers and the National Academy of Sciences, and make available to the public, the results of such tests. Tests under this paragraph shall be conducted under such terms and conditions (including requirements for preliminary testing by qualified independent laboratories) as the Administrator may prescribe by regulations.

(b) Testing procedures; hearing; judicial review; additional evidence

(1) In order to determine whether new motor vehicles or new motor vehicle engines being manufactured by a manufacturer do in fact conform with the regulations with respect to which the certificate of conformity was issued, the Administrator is authorized to test such vehicles or engines. Such tests may be conducted by the Administrator directly or, in accordance with conditions specified by the Administrator, by the manufacturer.

(2)(A)(i) If, based on tests conducted under paragraph (1) on a sample of new vehicles or engines covered by a certificate of conformity, the Administrator determines that all or part of the vehicles or engines so covered do not conform with the regulations with respect to which the certificate of conformity was issued, he may suspend or revoke such certificate in whole or in part, and shall so notify the manufacturer. Such suspension or revocation shall apply in the case of any new motor vehicles or new motor vehicle engines manufactured after the date of such notification (or manufactured before such date if still in the hands of the manufacturer), and shall apply until such time as the Administrator finds that vehicles and engines manufactured by the manufacturer do conform to such regulations. If, during any period of suspension or revocation, the Administrator finds that a vehicle or engine actually conforms to such regulations, he shall issue a certificate of conformity applicable to such vehicle or engine.

(ii) If, based on tests conducted under paragraph (1) on any new vehicle or engine, the Administrator determines that such vehicle or engine does not conform with such regulations, he may suspend or revoke such certificate insofar as it applies to such vehicle or engine until such time as he finds such vehicle or engine ac-

tually so conforms with such regulations, and he shall so notify the manufacturer.

(B) (i) At the request of any manufacturer the Administrator shall grant such manufacturer a hearing as to whether the tests have been properly conducted or any sampling methods have been properly applied, and make a determination on the record with respect to any suspension or revocation under subparagraph (A); but suspension or revocation under subparagraph (A) shall not be stayed by reason of such hearing.

(ii) In any case of actual controversy as to the validity of any determination under clause (i), the manufacturer may at any time prior to the 60th day after such determination is made file a petition with the United States court of appeals for the circuit wherein such manufacturer resides or has his principal place of business for a judicial review of such determination. A copy of the petition shall be forthwith transmitted by the clerk of the court to the Administrator or other officer designated by him for that purpose. The Administrator thereupon shall file in the court the record of the proceedings on which the Administrator based his determination, as provided in section 2112 of title 28.

(iii) If the petitioner applies to the court for leave to adduce additional evidence, and shows to the satisfaction of the court that such additional evidence is material and that there were reasonable grounds for the failure to adduce such evidence in the proceeding before the Administrator, the court may order such additional evidence (and evidence in rebuttal thereof) to be taken before the Administrator, in such manner and upon such terms and conditions as the court may deem proper. The Administrator may modify his findings as to the facts, or make new findings, by reason of the additional evidence so taken and he shall file such modified or new

findings, and his recommendation, if any, for the modification or setting aside of his original determination, with the return of such additional evidence.

(iv) Upon the filing of the petition referred to in clause (ii), the court shall have jurisdiction to review the order in accordance with chapter 7 of title 5 and to grant appropriate relief as provided in such chapter.

(c) Inspection

For purposes of enforcement of this section, officers or employees duly designated by the Administrator, upon presenting appropriate credentials to the manufacturer or person in charge, are authorized (1) to enter, at reasonable times, any plant or other establishment of such manufacturer, for the purpose of conducting tests of vehicles or engines in the hands of the manufacturer, or (2) to inspect at reasonable times, records, files, papers, processes, controls, and facilities used by such manufacturer in conducting tests under regulations of the Administrator. Each such inspection shall be commenced and completed with reasonable promptness.

(d) Rules and regulations

The Administrator shall by regulation establish methods and procedures for making tests under this section.

(e) Publication of test results

The Administrator shall announce in the Federal Register and make available to the public the results of his tests of any motor vehicle or motor vehicle engine submitted by a manufacturer under subsection (a) of this section as promptly as possible after December 31, 1970, and at the beginning of each model year which begins thereafter. Such results shall be described in such nontechnical manner as will reasonably disclose to prospective ultimate purchasers of new motor vehicles and new motor vehicle engines the comparative performance of the

vehicles and engines tested in meeting the standards prescribed under section 1857f-1 of this title.

Clean Air Act § 207, 42 U.S.C. § 1857f-5a (1976) (*now* 42 U.S.C. § 7541)

§ 1857f-5a. Compliance by vehicles and engines in actual use

(a) Warranty

Effective with respect to vehicles and engines manufactured in model years beginning more than 60 days after December 31, 1970, the manufacturer of each new motor vehicle and new motor vehicle engine shall warrant to the ultimate purchaser and each subsequent purchaser that such vehicle or engine is (1) designed, built, and equipped so as to conform at the time of sale with applicable regulations under section 1857f-1 of this title, and (2) free from defects in materials and workmanship which cause such vehicle or engine to fail to conform with applicable regulations for its useful life (as determined under section 1857f-1(d) of this title).

(b) Testing methods and procedures

If the Administrator determines that (i) there are available testing methods and procedures to ascertain whether, when in actual use throughout its useful life (as determined under section 1857f-1(d) of this title), each vehicle and engine to which regulations under section 1857f-1 of this title apply complies with the emission standards of such regulations, (ii) such methods and procedures are in accordance with good engineering practices, and (iii) such methods and procedures are reasonably capable of being correlated with tests conducted under section 1857f-5(a)(1) of this title, then—

(1) he shall establish such methods and procedures by regulation, and

(2) at such time as he determines that inspection facilities or equipment are available for purposes of carrying out testing methods and procedures established under paragraph (1), he shall prescribe regulations which shall require manufacturers to warrant the emission control device or system of each new motor vehicle or new motor vehicle engine to which a regulation under section 1857f-1 of this title applies and which is manufactured in a model year beginning after the Administrator first prescribes warranty regulations under this paragraph (2). The warranty under such regulations shall run to the ultimate purchaser and each subsequent purchaser and shall provide that if—

(A) the vehicle or engine is maintained and operated in accordance with instructions under subsection (c) (3) of this section.

(B) it fails to conform at any time during its useful life (as determined under section 1857f-1(d) of this title) to the regulations prescribed under section 1857f-1 of this title, and

(C) such nonconformity results in the ultimate purchaser (or any subsequent purchaser) of such vehicle or engine having to bear any penalty or other sanction (including the denial of the right to use such vehicle or engine) under State or Federal law,

then such manufacturer shall remedy such nonconformity under such warranty with the cost thereof to be borne by the manufacturer.

(c) Nonconforming vehicles; plan for remedying nonconformity; instructions for maintenance and use

Effective with respect to vehicles and engines manufactured during model years beginning more than 60 days after December 31, 1970—

(1) If the Administrator determines that a substantial number of any class or category of vehicles or engines, although properly maintained and used, do not conform to the regulations prescribed under section 1857f-1 of this title, when in actual use throughout their useful life (as determined under section 1857f-1(d) of this title), he shall immediately notify the manufacturer thereof of such nonconformity, and he shall require the manufacturer to submit a plan for remedying the nonconformity of the vehicles or engines with respect to which such notification is given. The plan shall provide that the nonconformity of any such vehicles or engines which are properly used and maintained will be remedied at the expense of the manufacturer. If the manufacturer disagrees with such determination of nonconformity and so advises the Administrator, the Administrator shall afford the manufacturer and other interested persons an opportunity to present their views and evidence in support thereof at a public hearing. Unless, as a result of such hearing the Administrator withdraws such determination of nonconformity, he shall, within 60 day after the completion of such hearing, order the manufacturer to provide prompt notification of such nonconformity in accordance with paragraph (2).

(2) Any notification required by paragraph (1) with respect to any class or category of vehicles or engines shall be given to dealers, ultimate purchasers, and subsequent purchasers (if known) in such manner and containing such information as the Administrator may by regulation require.

(3) The manufacturer shall furnish with each new motor vehicle or motor vehicle engine such written instructions for the maintenance and use of the vehicle or engine by the ultimate purchaser as

may be reasonable and necessary to assure the proper functioning of emission control devices and systems. In addition, the manufacturer shall indicate by means of a label or tag permanently affixed to such vehicle or engine that such vehicle or engine is covered by a certificate of conformity issued for the purpose of assuring achievement of emissions standards prescribed under section 1857f-1 of this title. Such label or tag shall contain such other information relating to control of motor vehicle emissions as the Administrator shall prescribe by regulation.

(d) Dealer costs borne by manufacturer

Any cost obligation of any dealer incurred as a result of any requirement imposed by subsection (a), (b), or (c) of this section shall be borne by the manufacturer. The transfer of any such cost obligation from a manufacturer to any dealer through franchise or other agreement is prohibited.

(e) Cost statement

If a manufacturer includes in any advertisement a statement respecting the cost or value of emission control devices or systems, such manufacturer shall set forth in such statement the cost or value attributed to such devices or systems by the Secretary of Labor (through the Bureau of Labor Statistics). The Secretary of Labor, and his representatives, shall have the same access for this purpose to the books, documents, papers, and records of a manufacturer as the Comptroller General has to those of a recipient of assistance for purposes of section 1857j of this title.

(f) Inspection after sale to ultimate purchaser

Any inspection of a motor vehicle or a motor vehicle engine for purposes of subsection (c) (1) of this section,

after its sale to the ultimate purchaser, shall be made only if the owner of such vehicle or engine voluntarily permits such inspection to be made, except as may be provided by any State or local inspection program.

Clean Air Act § 210, 42 U.S.C. § 1857f-6b (1976) (*now* 42 U.S.C. § 7544)

§ 1857f-6b. Federal assistance in developing and maintaining vehicle emission devices and systems inspection and emission testing and control programs

The Administrator is authorized to make grants to appropriate State agencies in an amount up to two-thirds of the cost of developing and maintaining effective vehicle emission devices and systems inspection and emission testing and control programs, except that—

(1) no such grant shall be made for any part of any State vehicle inspection program which does not directly relate to the cost of the air pollution control aspects of such a program;

(2) no such grant shall be made unless the Secretary of Transportation has certified to the Administrator that such program is consistent with any highway safety program developed pursuant to section 402 of title 23; and

(3) no such grant shall be made unless the program includes provisions designed to insure that emission control devices and systems on vehicles in actual use have not been discontinued or rendered inoperative.